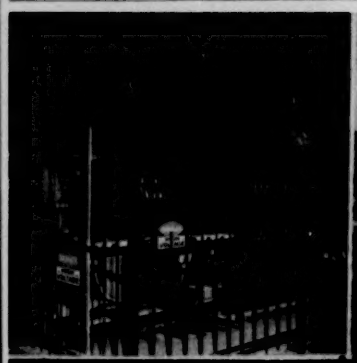
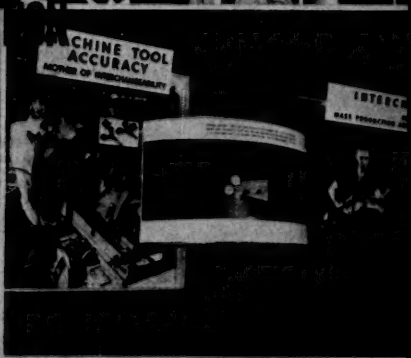
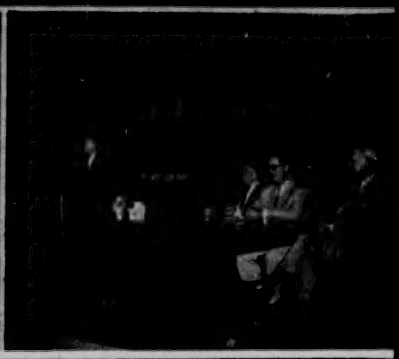
News Magazine of the American Standards Association, Incorporated







American Standards Association, Inc

Officers

ROGER E. GAY, President
EDWARD T. GUSHEE, Vice-President
R. M. GATES, Chairman, Executive Committee
VICE ADMIRAL G. F. HUSSEY, JR, USN (Ret), Managing Director and Secretary
CYRIL AINSWORTH, Tech Director and Asst Secy

Board of Directors

R. D. BONNEY, Director of Mfg, Congoleum-Nairn, Inc—Amer Soc for Testing Materials
C. W. BRYAN, Jr, President, Pullman-Standard Car Mfg Co—Amer Soc of Civil Engrs
*G. E. BUTTERFIELD, Secretary, Hartford Accident and Indemnity Co—Nat Safety Council
MISS ARDENIA CHAPMAN, Dean, Coll of Home Economics, Drexel Inst of Technology—Amer Home Economics Assn
WILLARD CHEVALIER, Executive Vice-President, McGraw-Hill Publishing Co—Member-at-Large
R. A. COLGAN, Jr, Vice-President and General Manager, Shasta Forests Co Nat Lumber Mfrs Assn
L. S. COREY, President and General Manager, Utah Construction Co—Member-at-Large
E. H. EACKER, President, Boston Consolidated Gas Co—Amer Gas Assn
*R. M. GATES, President, Air Preheater Corp—Amer Soc of Mech Engrs
*ROGER E. GAY, President, The Bristol Brass Corporation—Copper and Brass Research Assn—President, ASA
*EDWARD T. GUSHEE, Vice-President, The Detroit Co—Vice-President, ASA
C. E. HODGES, President, Amer Mutual Liability Ins Co—Nat Assn of Mutual Casualty Cos
*T. D. JOLLY, Vice-President, Aluminum Co of Amer—Past President, ASA
R. OAKLEY KENNEDY, Formerly Vice-President, Cluett, Peabody & Co, Inc—Member-at-Large
J. H. McELHINNEY, Vice-President, Wheeling Steel Corp—Amer Iron and Steel Inst
H. S. SIZER, Director of Design, Machine Tools, Brown & Sharpe Mfg Co—Nat Machine Tool Bldrs Assn
MAURICE STANLEY, Chairman of the Board, Fafnir Bearing Co—Anti-Friction Bearing Mfrs Assn, Inc
HOYT P. STEELE, Executive Vice-President, Benjamin Elec Mfg Co—Nat Elec Mfrs Assn
J. R. TOWNSEND, Materials Engr, Bell Tel Labs, Inc—Chairman, ASA Stds Council
COL J. G. VINCENT, Engineering Consultant, Packard Motor Car Co—Automobile Mfrs Assn
S. S. VOORHEES, Vice-President, New York Central System—Assn of Amer RR
W. C. WAGNER, Philadelphia Elec Co—Past Chairman, ASA Standards Council
*Members of the Executive Committee

Standards Council

J. R. TOWNSEND, Bell Tel Labs, Murray Hill, N. J., Chairman
A. S. JOHNSON, Vice-President and Manager, Engg Dept, Amer Mutual Liability Ins Co, Boston, Mass., Vice Chairman

Chairmen of Correlating Committees

BUILDING AND CONSTRUCTION—Theodore I. Coe, Tech Secy, Amer Inst of Architects, Washington, D. C.
CHEMICAL INDUSTRY—J. G. Henderson, Carbide and Carbon Chemicals Co, Div of Union Carbide and Carbon Corp, South Charleston, W. Va.
CONSUMER—Richard S. Burke Manager, Merchandise Testing and Development Labs, Dept. 817, Sears, Roebuck and Co, Chicago, Ill.
DRAWINGS AND SYMBOLS—H. P. Westman, Internat Tel and Tel Corp, New York, N. Y.
ELECTRICAL—C. R. Harte, New Haven, Conn.
HIGHWAY—S. J. Williams, Asst to Pres, Nat Safety Council, Chicago, Ill.
MECHANICAL—F. T. Ward, Wilton, Conn.
MINING—M. D. Cooper, Director, Mining Engg Education, Nat Coal Assn, Pittsburgh, Pa.
MISCELLANEOUS—G. H. Harnden, Standards Div, Exec Dept, Gen Elec Co, Schenectady, N. Y.
PHOTOGRAPHIC—Paul Arnold, Ansco, Div of General Aniline & Film Corp Binghamton, N. Y.
SAFETY—Myron Park Davis, Yonkers, N. Y.

ASA Member-Bodies

Air Conditioning & Refrigerating Machinery Assn
Aluminum Assn
Amer Gas Assn
Amer Home Economics Assn
Amer Inst of Chem Engrs
Amer Inst of Elec Engrs
Amer Iron & Steel Inst
Amer Ladder Inst
Amer Petroleum Inst
Amer Railway Car Inst
Amer Rebuilders Assn, Inc
Amer Soc of Civil Engrs
Amer Soc of Mech Engrs
Amer Soc for Testing Materials
Amer Soc of Tool Engrs, Inc
Amer Water Works Assn
Anti-Friction Bearing Mfrs Assn, Inc
Associated Gen Contractors of Amer, Inc
Assn of Amer Railroads
Assn of Casualty and Surety Cos, Accident Prevention Dept
Automobile Mfrs Assn
Cast Iron Pipe Research Assn
Conveyor Equipment Mfrs Assn
Copper & Brass Research Assn
Diesel Engine Mfrs Assn
Elec Light and Power Group:
  Assn of Edison Illum Cos
  Edison Elec Inst
Fire Protection Group:
  Associated Factory Mutual Fire Ins Cos
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Labs, Inc
Gas Appliance Mfrs Assn
Grinding Wheel Inst
Gypsum Assn
Heating, Piping and Air Conditioning Contractors Nat Assn
Industrial Fasteners Inst
Inst of Radio Engrs
Mfrs Stdzn Soc of the Valve and Fittings Industry
Metal Cutting Tool Inst
Motion Picture Research Council, Inc
Nat Aircraft Stds Com
Nat Assn of Hosiery Mfrs
Nat Assn of Mutual Casualty Cos
Nat Assn of Purchasing Agents
Nat Coal Assn
Nat Elec Mfrs Assn
Nat Lumber Mfrs Assn
Nat Machine Tool Builders' Assn
Nat Office Management Assn
Nat Retail Dry Goods Assn
Nat Safety Council
Outdoor Advertising Assn of Amer, Inc
Oxychloride Cement Assn
Photographic Mfrs Group:
  Ansco Div of Gen Aniline & Film Corp
  Eastman Kodak Co
Portland Cement Assn
Radio-Television Mfrs Assn
Refrigeration Equipment Mfrs Assn
Scientific Apparatus Makers Assn
Soc of Automotive Engrs, Inc
Soc of Motion Picture and Television Engrs
Structural Clay Products Inst
Synthetic Organic Chem Mfrs Assn of the U. S.
Telephone Group:
  Bell Tel System
  U.S. Independent Tel Assn
U. S. Machine, Cap, Wood and Tapping Screw Bureaus:
  Machine Screw Nut Bur
  Socket Screw Products Bur
  Tubular and Split Rivet Council

Associate Members

Acoustical Soc of Amer
Amer Assn of Textile Chemists and Colorists
Amer Gear Mfrs Assn
Amer Hotel Assn
Amer Inst of Architects
Amer Inst of Laundering
Amer Ordnance Assn
Amer Soc of Bakery Engrs
Amer Soc of Heating & Ventilating Engrs
Amer Soc of Lubrication Engrs
Amer Soc of Refrigerating Engrs
Amer Trucking Assns, Inc
Amer Welding Soc
Assn of Iron and Steel Engrs
Assn of Roller and Silent Chain Mfrs
Business Forms Inst
Certified Ballast Mfrs
Compressed Gas Assn, Inc
Douglas Fir Plywood Assn
Heat Exchange Inst
Illum Engg Soc
Indiana Limestone Inst
Indust Safety Equip Assn, Inc
Instrument Soc of Amer
Insulated Power Cable Engrs Assn
Insulation Board Inst
Internat Acetylene Assn
Marble Inst of Amer, Inc
Metal Lath Mfrs Assn
Metal Window Inst
Nat Assn of Finishers of Textile Fabrics
Nat Concrete Masonry Assn
Nat Elevator Mfg Industry, Inc
Nat Lime Assn
Nat Restaurant Assn
Nat Screw Machine Products Assn
Nat Tool and Die Mfrs Assn
Photographic Soc of Amer, Inc
Pipe Fabrication Inst
Red Cedar Shingle Bur
Soc of Naval Architects and Marine Engrs
Spring Washer Inst
Textile Color Card Assn of the U.S., Inc
Textile Distributors Inst, Inc
Veneer Assn

Company Members—More than 2000 companies hold membership either directly or by group arrangement through their respective trade associations.

Marginal Notes

National Standardization Conference—

Many organizations made the National Standardization Conference a success. The Standards Committee of the National Association of Purchasing Agents had a hand in arranging the program for the first day's sessions. Their stake in standardization is made clear in the discussions presented (page 370).

Cooperating with the NAPA Committee was the Company Member Conference of the American Standards Association—engineers and executives from a cross section of America's important industries.

The Building session (page 373) was made possible through cooperation of the American Institute of Architects, the National Association of Homebuilders, and The Producers' Council.

Representatives of member associations and societies were the principal actors in the Standards Council meeting (page 372) and in the panel on "Engineering Significance of Standards" (page 377).

The chemical industry itself provided representatives who analyzed the industry's approach to procurement standards (page 382).

All National Standardization Conference papers are abstracted.

1952 Administrative Committee of the Company Member Conference—

Seated, (left to right) W. H. Kiler, Principal Standards Engineer, E. I. du Pont de Nemours & Company, Wilmington, Delaware; S. H. Watson, RCA Victor Division, Radio Corporation of America, Camden, New Jersey, Chairman; K. B. Clarke, Western Electric Company, New York, Chairman-Elect; W. P. Fleming, Jeffrey Manufacturing Company,

Columbus, Ohio, Vice-Chairman Elect. Standing, (left to right) P. L. Houser, General Supervisor, Manufacturing Standards Research, International Harvester Company, Chicago; Walter S. Scott, Metallurgist, Republic Steel Corporation, Cleveland, Ohio; Robert G. Cummings, Ford Motor Company, Detroit, Michigan; L. M. Dalcher, Superintendent of Standards and Publications, Morse & Company, Beloit, Wisconsin; E. H. Jorgensen, Standards Engineer, Tennessee Eastman Company, Kingsport, Tennessee; J. L. Walker, Assistant Engineer, Purchasing Department, The Texas Company, New York.

Caquot Article Postponed—

We ask our readers' indulgence. In the September issue of STANDARDIZATION we promised you for November Dr. Albert Caquot's proposal for world-wide standardization of the ratio between units of measurement. This paper will appear in December instead.

OUR FRONT COVER

Some of the highlights of the National Standardization Conference—Left (above) electrical equipment for model coal mine was protected by American Standard safety sign; (center) Standards Council members received service award; (below) auto industry's exhibit featured standardization. Center (above) the Museum of Science and Industry, Chicago, was Conference headquarters; (center) Centennial's Adam to Atom show enlivened Conference meetings held in auditorium directly underneath theatre; (below) ASME Boiler Code Committee was honored for outstanding service; Right (above) Willis S. MacLeod acknowledged welcome extended to Government representatives; (center) Museum's machine tool exhibit played up interchangeability; (below) one of the Conference panel sessions.

Opinions expressed by authors in STANDARDIZATION *are not necessarily those of the American Standards Association.*

Standardization

Formerly Industrial Standardization

ASA

Reg. U. S. Pat. Off.

Published Monthly by American Standards Association, Incorporated

70 E. 45th St., N. Y. 17, N. Y. President: Roger E. Gay

Editor: Ruth E. Mason Production Editor: Marie Verlengeri

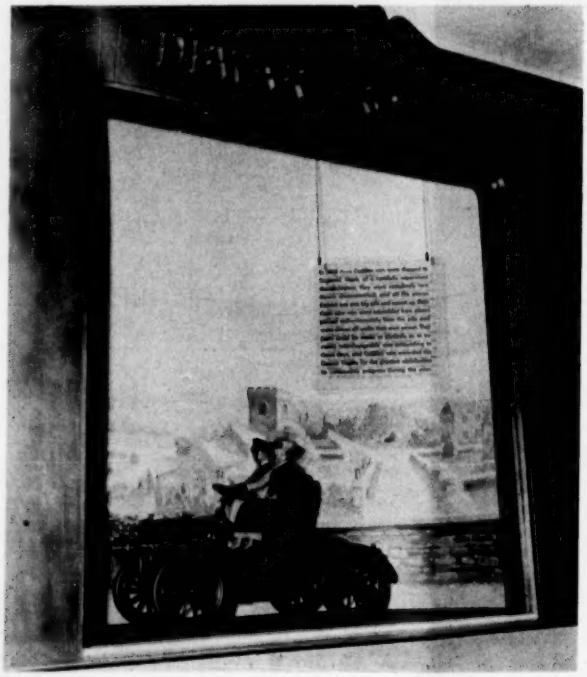
NOVEMBER, 1952 VOL. 23, NO. 11

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Single copy 35c. $4.00 per year (foreign $5.00). Schools and libraries $3.00 (foreign $4.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 11, 1949, at the P.O., New York, N. Y., under the Act of March 3, 1879.

The panel on Mass Production, Interchangeability, and Standardization explains: "Mass production demands careful planning. The part itself and the dies and machines for making it must be accurately designed long before production starts. . . . Interchangeable parts make mass production possible." The first successful demonstration of interchangeable parts in the automobile industry is commemorated in The Dewar Trophy panel.

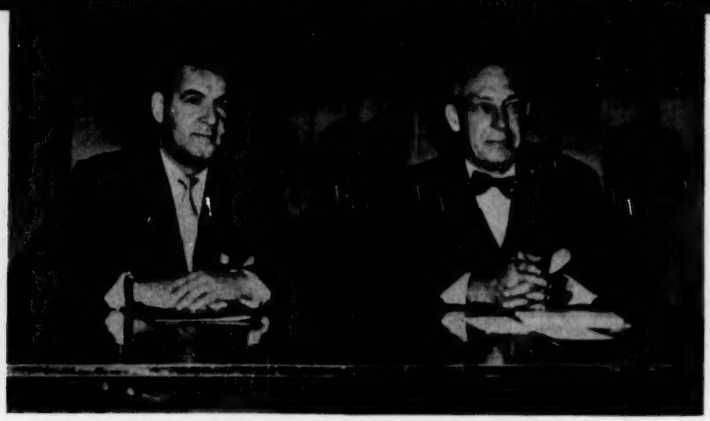
The Museum of Science and Industry was headquarters for the National Standardization Conference. Appropriately, the Museum's automobile exhibit featured standardization. The panel displaying Early Production Methods points out: "In the early days automobiles were not made with standardized parts; workmen made each car by itself. . . . An automobile was built from the ground up in one place. The pieces were brought to it, then hammered or filed until they fit."



Engineering exhibits feature standards and mass production . . .

The plaque explains: "In 1908 three Cadillac cars were shipped to England. There, at a carefully supervised demonstration, they were completely torn down, disassembled, and all the pieces thrown into one big pile and mixed up. Then three new cars were assembled from pieces picked indiscriminately from the pile and were driven off under their own power. That parts could be made so perfectly as to be easily interchangeable was astounding in those days, and Cadillac was awarded the Dewar Trophy for the greatest contribution to automotive progress during the year."

Other exhibits connected with standardization are shown in two of the individual pictures on our cover.



Roger E. Gay (left), president, The Bristol Brass Corporation, and president, American Standards Association, with Joseph W. Barker (right), president, Research Corporation, keynote speaker at the Conference.

The Third National Standardization Conference

The Third National Standardization Conference met in Chicago September 8 through 10 as part of the Centennial of Engineering. Celebrating the one hundredth anniversary of the American Society of Civil Engineers, first of America's great engineering societies, the Conference called attention to the inter-relation of engineering, industrial development, and standardization. The theme "Standards—Engineering Tool for Industry," underlined the role of standards as used by engineers in the development of America's unique mass production industries.

Both Roger E. Gay in his opening address, and Joseph W. Barker in his keynote address paid tribute to the accomplishments of the past but laid special emphasis on the possibilities of the future. Both saw the future of standardization in terms of world economy.

"American industry is gaining very little and is losing a great deal by refusing or neglecting to make its standards worldwide in so many fields."—Roger E. Gay

Three events of outstanding importance in standardization have occurred during the past year, Mr Gay, president of the Bristol Brass Corporation and president of the American Standards Association, told the audience. These were the approval by the American Standards Association of the first American Standards for rayon fabrics; the agreement entered into by the General Services Administration and the Department of Defense for use of nationally recognized industry and technical society standards; and the meeting of the International Organization for Standardization in New York.

Mr Gay pointed to the rayon standards as an example of industrial self-government, and an indication of the ability of free enterprise "to respond to the need of the buying public for informative labeling and minimum requirements for the rayon industry."

If the new government policy for use of nationally recognized standards and specifications is maintained and developed, "it will save American industry and the American taxpayer millions of dollars and countless hours of wasted motion," Mr Gay said.

As for the international standards movement, many Americans assume that American industry is taking a position of strong leadership, and that our techniques and principles "are being forcefully and effectively presented at international standards meetings." "That just isn't true," Mr Gay said.

American industry did generously support the ISO meetings at Columbia and sent a good representation of experts, he pointed out. American industry generously opened its plants and its methods to visitors from friendly foreign countries. And some American industries have indeed participated whole-heartedly in standards work in their fields.

"But in the long, slow work of developing, writing and approving international commercial and industrial standards, the U. S. has not taken a position of leadership," Mr Gay declared.

The U. S. participates actively in a total of 23 of the 77 ISO committees, he said. It is kept informed on the progress of the work of 15 others. Among these 15 committees in which the U. S. observes but does not participate are standardization of bolts and nuts, limits and fits, pipes and fittings, iron and steel, pulleys and belts, paper, welding, drawings, chemistry, laboratory glassware, textile machinery, stretchers and stretcher carriers, transfusion equipment for medical use, and machine tools.

In the work of 37 of the 77 ISO committees, the U. S. neither takes part nor is kept informed.

By refusing or neglecting to make our standards worldwide in so many fields, we are losing business; we are risking our economic leadership, and we are sacrificing a lot of the security that common standards with the western world would give us, Mr Gay declared.

Europeans neither understand nor like this lack of leadership on our part. For once, he said, we are being criticized for *not* interfering in their affairs. "Time and time again, ISO committees have asked for the participation of U. S. industry in international standards work —and have not got it. Committeemen have asked:

" 'Where are the Americans?

" 'America is our largest buyer, our largest seller. Will our decisions mean anything without your being here?'

Citing agricultural machines as a case in point, he said, "All ISO members assumed that the U. S. would, of course, take the sponsorship of that standards project. We are the world's largest makers of agricultural machines. The world buys them from us in considerable quantities. And yet, because of default of the U. S., the secretariat of that committee was given to Portugal. Whether we like it or not that committee will make decisions that will influence our customers and our markets. We are not there either to protest, advise, lead, or even observe.

"This country has special problems in the formulation of standards because of the very nature of our private enterprise economy. The ASA is the U. S. member of the ISO. We present the unified viewpoints of many segments of American industry. Our method of developing standards is slow, but it is an essential part of our democratic process. Because they are made right, our standards are right. They are used and they endure.

"As standards people, we must be patient. And we must remember, I think, that progress and human development can be measured only in terms of change, only in terms of movement from a starting point. We must not compare what we have with what we want or with some far-distant idealized goal. We must compare it with what we once had, and with what we can reasonably hope to accomplish in a given period ahead of us.

"In standards work we have come a long, long distance in a very short time. We do not now have adequate national standards; but the standards movement is young, and we are infinitely better off in standards than we were twenty years ago, ten years ago. We do not participate adequately in the international standards movement; and yet we have come further in this work in the past five years than we traveled in the previous half-century.

"It is the future we should be concerned with now, not the errors or inadequacies of the past. We have a good foundation on which to build, both in national and international standards. I firmly believe that we shall build greatly and successfully on it. The finest work of the standardization movement lies ahead of us, not behind us."

"Never before has our need for a comprehensive set of national standards been so acute"—Joseph W. Barker

In his keynote address Dr Joseph W. Barker, president and chairman of the Board of the Research Corporation, called for "a strong, expanding national standards movement." We must, he said, make the most of what we have in manpower and materials, in time and money and machines, "if we on this continent are to develop and flourish—indeed, if we are to endure and survive."

"Others may marvel at the extent of our standardization and may properly cite us to the rest of the world as a shining example," he said. "As an engineer, I can think only of the deficiencies in our standards, of the progress that still must be made, of the problems that are still unsolved."

Mass production was the main factor, the magic key that made the increase in material blessings experienced in this country in the last 40 years possible. "You know," said Dr Barker, "that standards, which we here today call the Engineering Tools of Industry, are the essential factor that underlies all mass production methods, and makes possible our large-scale production, distribution, and consumption."

"Since 1910," he said, "this nation has increased its supply of machine power 4½ times. We have more than doubled the output each of us produces for every hour we work. We have increased our annual real income from less than $2,400 per household to more than $4,000. We have cut 18 hours from our average work week. We have reduced industrial accidents, eliminated child labor, and conquered many age-old diseases of mankind."

Dr Barker quoted Robert E. Wilson, chairman of the Standard Oil Company of Indiana, "For the first time in the history of mankind we know, in the middle of this century, that we can produce enough to give every man, woman, and child what they need in food, clothing, and shelter. These are material benefits, to be sure, but in this material base we have the means for building a culture without parallel in history."

One of the greatest changes in the past 40 years has been in the national attitude toward standardization, Dr Barker remarked. "It is hard to remember now how bitterly this great and beneficial movement was once fought, how widely it was misunderstood, and how its great pioneers and early crusaders were called dreamers and visionaries."

In becoming the powerful economic force and dominating characteristic of our national economy that it now is, standardization has had to meet and overcome four powerful points of opposition, he said. They still contain dangers against which we must be ever alert, he warned.

These four opposition points were: (1) the fear that standardization spelled regimentation; that it meant monotonous, unaesthetic sameness in our living; (2) the fear of the manufacturer that he would lose business by making standard parts; (3) the government's view that industry and business associations were against the public

interest; (4) the fear that adoption of standards can work to freeze men's ideas and minds, and can stifle the development of new methods, new machines, and the use of new materials.

In evaluating inventions, filing patent applications and in the licensing and commercial development of inventions, the Research Corporation is constantly concerned with the problems of standardization, Dr Barker commented—when to standardize, how to standardize, how much to standardize, and when to change standards. "We know that at some point we must standardize in order to produce economically in quantity," he said, "but we work hard to vary the time and degree according to each individual case, and to leave the way clear for further change and development."

Dr Barker declared that he had studied ASA by-laws and has concluded "that it is difficult, if not impossible, to freeze minds, ideas, materials, or methods in standards under such principles and procedures."

"Every group substantially interested has the right to be represented on the body that develops a standard," he explained. "There is nothing compulsory about the use of American Standards. An association of manufacturers may standardize on a product under ASA procedures, but there can be nothing to stop an enterprising maker from departing from that standard to turn out a specialized product.

"True national standards developed under such procedures and principles rise above all the objections that have been charged to the standards movement as I have described them one by one. They are the very opposite of regimentation and monotony. They enlarge markets rather than diminish them. They are truly in the public interest. They cannot become limitations, restrictions, or controls. They are the essence of flexibility. They fit perfectly the function of standards as described by one of America's pioneer standards men, A. W. Whitney, who spoke of standards as 'the liberator that relegates the problems that have already been solved to the field of routine, and leaves the creative faculties free for the problems that are still unsolved.'

"Thus the standards movement in this country has overcome its main obstacles, to become the outstanding characteristic of our economy and, what is more, to be recognized and accepted as such."

"Despite this progress, we still do not have in this country an integrated system of voluntary national standards adequate to our growing needs," Dr Barker warned. "Our chief standards strength still lies in company and industry standards, and these standards are being developed as the result of specific difficulties as they arise rather than by carefully planned standards programs," he said. "Such a progress leads to a mosaic of standards in each industry. Standards do not and cannot reach full effectiveness until they become national in their scope and their application. We still do not all speak the same language in business, industry, technology, and distribution.

"I know of one industrial laboratory that uses 15 men to do nothing but analyze the requirements of drawings on government orders. An electrical manufacturer stated last year that it sometimes takes longer to redraw government blueprints to fit his own shop practice than it does to manufacture the actual product.

"Our building laws and ordinances are decades out of date, and are far behind those of South American countries which we are inclined to think of as industrially backward."

As for the future, Dr Barker said:

"We are in the middle of an expansion program that for years to come will absorb into preparedness uses about one-fifth of all the goods and services we produce, and in some industries will absorb as much as 50 percent. We are engaged in a global program of restoring and maintaining a balance of military power. We are, whether we know it or not, engaged in a tremendous standardization battle with Russia. That country is striving night and day to standardize the weapons and production of its eastern European satellites, in order to create one unified industrial complex.

"Never before has our need for a comprehensive set of national standards been so acute. We cannot carry out our expansion program economically or speedily without it. Never before has the need been so great for harmonizing our standards with those of our allies. We

K. B. Clarke, Western Electric Company (right) was elected chairman by the Company Member Conference at its business meeting during the first day's session of the National Standardization Conference. W. P. Fleming, Jeffrey Manufacturing Company, Columbus, Ohio (left) was elected vice-chairman. New members of CMC's Administrative Committee elected at this meeting are: R. G. Cummings, Ford Motor Company; W. H. Kiler, E. I. du Pont de Nemours & Company, Inc; J. J. Schmidt, East Ohio Gas Company; and W. S. Scott, Republic Steel Corporation.

are shipping tremendous quantities of military goods abroad and buying military items and components from the same countries—rockets from Belgium, machine tools from France, motors from England. We cannot efficiently buy and sell, give and take, without agreement on basic international standards for manufacturing processes, critical tolerances, details, dimensions and compositions.

"Already the lack of adequate national and international standards is costing us the same headaches, the same delays and wastes, that it cost us in two world wars. The Glenn L. Martin Company is building the twin-jet Canberra bomber under license from the British Electric Company. The work is proving more costly than expected because of long delays in trying to mesh British and American blueprints. You may remember that the same thing happened ten years ago when we took over manufacture of the Merlin Rolls-Royce engine. One might be pardoned for saying, 'This is where I came in.' Or for asking, 'Will we never learn?'

"We must build for ourselves a strong, expanding national standards movement supported by private industry and carried out on the principle of voluntary cooperation of industry. We must develop a common language among ourselves for performance and acceptance. An industry that thinks nothing of working in dimensional control to the sixth decimal point can surely achieve such harmonious integration in its industrial activities."

(Left)—Former President Herbert Hoover congratulates American Society of Civil Engineers' president, Carlton S. Proctor, on the Society's first hundred years.

(Right)—Commemorative three-cent stamps were issued in honor of the Centennial. A special Post Office sub-station was set up in the Society's headquarters on the day of issue.

The Centennial of Engineering

The Centennial Year of the American Society of Civil Engineers provided an opportunity for all branches of the profession in the free nations of the world to come together in Chicago, September 9-13. This was the greatest assembly of engineers in history. Attendance approached 25,000 and represented 61 organizations of some 20 countries. A total of 1,059 technical papers were read before the scores of sessions held by the many societies, some of them meeting jointly.

Particular emphasis was given the Century of Engineered Progress in the United States. A unique phase, for a technical gathering, was a schedule of symposia on vital subjects couched in the layman's language, so that the man in the street was enabled to receive, in everyday speech, the expressions of some of the nation's eminent engineers, industrialists, and educators.

Close to 400 representatives of foreign nations participated in the sessions, and toured major engineering projects in the United States.

Former President Herbert Hoover was the principal speaker at the Centennial Day luncheon on September 10, at which time President Carlton S. Proctor received for the American Society of Civil Engineers the congratulatory scrolls of upward of 45 engineering organizations in this and other countries.

The leading engineering awards, the John Fritz Award and the Hoover Medal, were presented, respectively, to Benjamin F. Fairless, President and Chairman of United States Steel, and Clarence D. Howe, Canadian Minister of Defense and Production.

The convention was the scene of the first-day issue of a commemorative 3-cent stamp honoring the American Society of Civil Engineers.

Participants in the Centennial convocation (left to right): William N. Carey, Executive Secretary, ASCE; Allen S. Quartermaine, President, British Institution of Civil Engineers; Graham Clarke, Secretary, BICE; John Stirling, President, Engineering Institute of Canada.

Speakers at the opening session of the National Standardization Conference. Seated:—R. E. Gay (left); Joseph W. Barker (right). Standing:—(left to right) Vice Admiral G. F. Hussey, Jr, USN (Ret), Managing Director, American Standards Association; Cyril Ainsworth, Technical Director, American Standards Association; S. H. Watson, RCA Victor Division, Radio Corporation of America, chairman of the Company Member Conference. CMC acted as co-sponsor with the Committee on Standardization of the National Association of Purchasing Agents for the Monday sessions of the Conference.

Standards for World Trade—

An Opportunity for American Leadership

by Cyril Ainsworth

Technical Director, ASA

Were the meetings of the International Organization for Standardization, held in New York in June 1952, a success? This was the question discussed by Cyril Ainsworth, Technical Director of the American Standards Association, at the Monday morning session. In answering his question he pointed to the fact that some 188 delegates had attended the meeting from abroad—despite difficulties of travel from soft currency countries to a hard currency country.

This meant that 188 people had an opportunity to test American life and hospitality. They saw evidences of the things which make America great. They saw examples of American ingenuity and ability. They made many American friendships that will last for years to come.

From the United States, 250 people participated in the technical decisions. In many cases this was the first time they had sat around an international conference table, listening to and observing the technical competence of fellow engineers from abroad. They observed the earnestness of purpose of delegates from other countries; they learned how seriously countries abroad are taking standardization work as a means of relieving economic distress; they learned of the great respect given to American technical opinion and experience.

They learned that ISO technical decisions are not made on a one-way street. They found that while American technical viewpoints are very much respected, they are not taken for granted. They learned that the competence of the technician from abroad enables him to question, rather directly, the value of applying the American viewpoint to practices in their countries. They found, further, that American viewpoints must be carefully, forcefully presented and must be completely sound technically.

The ISO meetings are important to American foreign trade, Mr Ainsworth declared. ASA has received complaints that certain ISO committees have been deliberately writing specifications designed to keep American goods out of the foreign market. American industries concerned have not been participating in the work of these committees. Some of these committees met in New York and American representatives were present on an observer basis. These representatives found no justification for the complaints. Some of the technical requirements in draft standards did not conform to practices in this country, but not because of any desire to freeze American goods out of the foreign market. It was due to the absence of United States representatives which prevented consideration of American practices.

ISO project TC 73 on certification marks is particularly significant to the future of American foreign trade, Mr Ainsworth said. Nineteen of the national standards bodies with membership in ISO participated in the discussion of this subject. Certification and labeling have become well established in a number of countries. India, for example, has recently passed a law assigning to the Indian Standards Institution the administration of certification and labeling regulations which are to be established. These will govern not only the labeling of Indian products sold throughout India but also Indian products sold abroad. They will also require labeling of goods manufactured in the United States and other countries which are sold in India. This type of procedure may extend to other countries and could become an important item in American foreign trade practices. Such certification and labeling is tied in with the standards programs of the various countries, he explained. ISO work, therefore, becomes of special significance; first, because it is attempting to coordinate the national standards of the countries having membership in ISO; second, because the project on trade marks is attempting to obtain uniformity in requirements for marking and in administration of certification and labeling procedures.

Purchasing–Standardizing Coordination in Company Operations

E. H. Weaver *Standards: A Procurement Tool. By E. H. Weaver, Manager of Purchases, Union Oil Company of California, Los Angeles; Chairman, Committee on Standardization, National Association of Purchasing Agents.*—Three principles can be recognized as in operation today: (1) Standards are a vital and effective tool in reducing the cost of procurement; (2) The purchasing and procurement officer can materially benefit himself, his company, industry, and society through standards; (3) The purchasing profession is alert as to its responsibilities and joins hands with the engineering profession in the advancement of standards.

Standardization may be discussed from three different angles: end product standardization; "in plant" standards; and industry-wide standardization.

Buyers think of "end product" standardization as the product their own company puts on the market. Generally speaking, buyers are more interested in the other fellow's end product which they purchase in the markets.

"In plant" standards refer to those items of equipment, tools, and maintenance and operation supplies used and consumed within a buyer's own plant. Here the average purchasing executive finds the greatest opportunities for direct savings.

Mr Weaver cited his own company's experience in pioneering on all-purpose grease. Not very long ago each service station had a panel board which carried 8 or 10 lubricating grease guns for injecting various specialized greases. In developing an all-purpose grease "our sales and research departments were motivated by the free enterprise principle of doing a better job for the motorist and thereby gaining his business," Mr Weaver said. Standardization was involved in that the single-purpose grease could be handled by one gun, thereby saving millions of dollars in equipment and time, as well as considerably reducing the inventory carried by the service station operator.

There are many opportunities for the alert purchasing executive and staff to counteract the tendency to design special items when industry standards are available.

An excellent example of a case where a purchasing executive saw a problem and did something about it was in the repetitive purchase of a specially designed type of underground service station tank. Each purchase of any quantity had to be considered a special project with the tank manufacturers. Other major petroleum marketing companies had the same problem. When they and leading tank manufacturers were called together, all parties involved arrived at a common standard. Today these tanks are being purchased on an off-the-shelf basis with considerable saving to both the consumer and the manufacturer.

W. H. Kiler *The Standardization-Procurement Team. By W. H. Kiler, Principal Standards Engineer, E. I. du Pont de Nemours & Company, Wilmington, Delaware.*—The chemical industry faces different problems from those of industry in general. Because of chemical reactions of a highly corrosive nature, the life of some equipment used by the chemical industry is a matter of months, even when built of special materials.

To sell our product in competition with others, we must obtain maximum life from the equipment. We must build our equipment, the structures which house it, and the auxiliary services to supply them, at the lowest cost. Consequently, the standards we develop are largely concerned with structural, metallurgical, and chemical matters related to the design, construction, and replacement or maintenance of plant and equipment.

Jointly with the manufacturing departments, our Stand-

E. H. Weaver (standing, left), Manager of Purchases Union Oil Company of California, Los Angeles, and chairman of the Committee on Standardization of the National Association of Purchasing Agents, gave the opening address at the Purchasing Session. L. J. Jacobi (standing, right), Supervising Engineer, Inspection and Standards, the Detroit Edison Company, served as moderator of the panel on *Purchasing-Standardizing Coordination in Company Operations*. Two standards men and two purchasing men were on the panel:—(seated, left to right) A. J. Beck, Standards Engineer, the Detroit Edison Company; E. S. Page, Special Assistant to the Executive Vice-President, American Machine and Foundry Company, New York; B. D. Henderson, General Purchasing Agent, Westinghouse Electric Corporation, Pittsburgh; W. H. Kiler, Principal Standards Engineer, E. I. du Pont de Nemours & Company, Wilmington, Delaware.

ards Committee develops the standards used in the design, construction, and maintenance of plants.

Standards have made cost reductions of five million dollars possible within a single year (before taxes). While this is an important contribution, of equal importance is the manpower saved.

In the actual construction of a research laboratory building at the new Experimental Station near Wilmington, a total of 173 du Pont Engineering Standards were used:

- 31 standards for concrete and masonry
- 13 standards for structural steel and for its erection
- 39 standards for general building operations, such as carpentry, millwork, hardware, plastering, painting, etc.
- 15 standards for heating and ventilation, air conditioning, insulation and refrigeration
- 33 standards for plumbing and pipe fitting
- 37 standards for electrical power and lighting, communications, and instrumentation
- 5 standards for safety and fire protection

This says nothing of American Standards—or those issued by NEMA, ASTM, NFPA, and others, also of prime interest to the procurement team.

"Store standards" help in simplifying procurement, inventory, and disbursement of many stores items. Individual savings made possible per item may be small, but accumulated saving over a single year has been half a million dollars, through elimination of sizes or styles.

The Purchasing Department obtains important additional savings through application of procurement techniques, quantity purchases, and inter-company distribution.

Standard Engineering Specifications are developed so the engineer may specify by a simple number the article he desires. These enable the Purchasing Department to procure equipment or component materials of the quality desired without payment of premium prices. Standard specifications eliminate the need for writing new specifications for each job undertaken.

Specifications of alternate stainless metals permit the procurement, during the present world situation, of large quantities of stock types of stainless metals, of a quality satisfactorily meeting operating requirements. Where severe corrosion conditions exist, more rigid specifications are applied.

Engineering Standards are aimed directly toward the saving of time by having basic information and data ready for use.

E. S. Page *Special Assistant to the Executive Vice-President, American Machine and Foundry Company, New York.*—The one common goal of purchasing and standardization is value—the greatest value obtainable at the lowest cost. When standards provide the minimum conditions for meeting a required performance, we have maximum value, the goal of purchasing.

Certain elements in a company's operations have the greatest influence on its development, formulation, and use of standards. These include the conditions under which it does business, its centralization, the concentration of production (range of processes and types and sizes of manufacturing facilities, volume of identical production, diversity of raw materials and purchased parts), and the status of standards in the company (management's attitude, financial provision for standards, etc).

There are three major classifications of technical standards: engineering standards; material standards; and manufacturing standards.

The Purchasing Department is interested especially in the selection of subjects for standardization, and the degree of treatment. Because of the Purchasing Department's knowledge of markets—the source of supply, commercially available materials, trade practices, and trends—it is in a position to make a very real contribution toward the selection, development, and formulation of standards.

An example is that of a company that quarries and processes light-weight industrial chemicals. Packaging requirements per year totalled several million large, multi-walled, Kraft paper bags. The design of these bags had to be the best compromise between customer requirements, bag loading and material handling problems, and cost. In this particular case the Purchasing Department determined that the design and shape of bag had considerable effect on the "price class" by which it was quoted. There were definite critical lengths involved in bag manufacture and if an economical length were designed a saving of about $20,000 per year could be obtained over previous practices.

It is best for the engineering department to provide leadership in standardization activities but with continual consultation with the purchasing department. Small committees, including representation of the various departments concerned, have been effective in the development of company standards. After standards have been developed and approved, some regular department of the company, rather than a committee, should be responsible for consistent use of the standards adopted. This is best accomplished through the engineering department.

Purchasing executives have a major responsibility to be continually aware of standardization in their day-to-day purchases. In addition to the simple mechanics of organization and procedure for the development and enforcement of standards, there is need for an aggressive spirit, an inquiring mind, a constant dissatisfaction, and strong friendly teamwork between the purchasing and standards departments in order to serve the best interests of the company.

A. J. Beck *Purchasing—Standards Coordination in Company Operations. By A. J. Beck, The Detroit Edison Company.*—Engineering and Purchasing are normally the two functions responsible for producing most of the benefits from standardization. How well and how frequently they work together are important factors in producing satisfactory results from standardization.

Detroit Edison has had a long history of close coordination and cooperation between Engineering and Pur-

chasing, and, as a result, between standardization and purchasing.

The main Standards Committee is headed by the Vice-President in charge of Engineering, Operations, and Construction. Also on this main committee are the Manager of Engineering, Manager of Purchases, The General Storekeeper, and the Editor of the Standards Catalog.

Four of the 20 formal Standards Program subcommittees are headed by buyers. On the other 16 a buyer represents and coordinates the procurement interest in standards. All have representation from engineering, using, and stores departments.

Coordination of the work of Standards Subcommittees and publication of the Standards Catalog are assigned to the Purchasing Department.

The actual work of standardization is concerned with:

(*a*) Determining whether an item is really necessary for company use;

(*b*) Selecting the proper item for each job so as to give the lowest ultimate cost to the company.

An example shows how two large companies handled the problem of standardization of typewriter ribbons. Both based their work on the Federal Specification. Company A wrote its own purchase requisition and incorporated most of the requirements of the Federal Specification. However, many did not lend themselves to ready evaluation at the time of purchase.

Purchase requisitions for typewriter ribbons referred to the specification, but local suppliers could not guarantee that their product would meet the requirements and purchase volume at any one location was not large enough to justify conducting tests to determine conformance. As a result, procurement continued on the old basis of buying whatever ribbon the user had been specifying in the past.

At Company B, discussions were held with the Purchasing Department to (1) determine how the standards should be expressed, and (2) to obtain an agreement on the use of the Federal Specification as the basis for conducting tests at the Research Laboratory. Also, arrangements were made to obtain for test purposes a number of ribbons made by different manufacturers. Test results were evaluated and the ribbons rated 1, 2, 3, etc, on the basis of their performance. The top three were approved for purchase and their names supplied to buyers. The Company's standard typewriter ribbon is readily bought by buyers at all plants because procurement is made on the basis of an approved list rather than on a specification which is impracticable to use.

Other examples cited by Mr Beck involved a major item of equipment in the heat exchanger field, and power transformers.

When Company F modified the manufacturer's standard for power transformers so as to minimize outage and maintenance problems, they found they were paying a premium of 15 percent because of extra work and effort on the part of the manufacturer. After discussion by the Engineering, Purchasing, and using departments, the company concluded that the manufacturer's standard power transformer would adequately satisfy their needs. Since then Company F has been saving 15 percent on its power transformer purchases.

B. D. Henderson *In Charge of Purchasing, Westinghouse Electric Corporation.*—Cost reductions in purchased materials made a major contribution to the activities that netted $20 million dollars a year. This is a substantial sum of money, even on a billion and a half in sales. About two-thirds of this involves coordinated action between purchasing and engineering. Lack of coordination between purchasing and engineering would certainly have eliminated the possibility of a good part of that 20 million dollars a year.

Not many purchasing agents understand standardization. You who are standards engineers should become better acquainted with the purchasing department and help them understand the relationship between standardization and purchasing. Many think of standardization as a single source of supply, or as simplifications of stores items, or a reduction in the number of different things that are purchased, or using one specification where three were used before.

Actually centralized purchasing as a function did not come into existence until there was standardization. One wonders whether it would be possible to have purchasing as a function as we know it if we did not have a highly organized system of standards in this country.

A surprisingly large proportion of purchase requisitions are one-line descriptions—1030 head brass machine screws; or 1010 sheet steel, 72 wide by mill length, hot roll pickled and oiled.

That is all one needs to describe what is wanted, but behind that description are a vast number of limitations and tolerances. If the purchaser had to sit down with the supplier and tell him exactly what the material was going to be used for, and have him tell exactly what he could do to furnish that material, negotiations would stretch into a long series of discussions.

If we can not have standardization of products, let us at least have standardization of terms. Most of our problems are problems of words. Are we talking about the same thing?

Purchasing should perform the function of a communication center between the engineering organization and the supplier. If it does that, and does it well, purchasing and engineering standards people will find to their mutual benefit that they make a very good team.

ASA Honors Council Members

"The Board of Directors wishes to give each of you some tangible recognition for the work you have done on behalf of the voluntary standards movement," ASA Presi-

dent Roger E. Gay told members of the Standards Council who have served for at least a year. He presented a service award to each. "Yours is the wisdom that guides the standards movement and keeps it on its steady course," he said. "Yours is the advance thinking that assures the successful future of voluntary standardization.

"You would not be doing this work if you did not realize the full importance of standards as an effective management tool for raising production, lowering prices, cutting unit costs, and increasing plant efficiency. You would not be doing it if you did not believe strongly that this country must now have a nationally coordinated set of voluntary standards if it is to protect itself, stabilize its economy, and prosper."

Standards Council members who received the award are:

Erwin H. Amick, Jr., Department of Chemical Engineering, Columbia University, New York (American Institute of Chemical Engineers)

Kenneth Anderson, Executive Vice-President, Scientific Apparatus Makers Association, Chicago (Scientific Apparatus Makers Association)

H. C. Dean, Vice-President, Consolidated Edison Company, New York (Electric Light and Power Group)

Charles W. Dorn, Director, Research and Testing Laboratory, J. C. Penney Company, New York (National Retail Dry Goods Association)

J. H. Foote, Vice-President, Commonwealth Services, Inc., Jackson, Michigan (American Society for Testing Materials)

Virgil M. Graham, Director of Technical Relations, Sylvania Electric Products Inc., Flushing, New York (Radio-Television Manufacturers Association)

H. R. Huntley, Transmission Engineer, American Telephone and Telegraph Company, New York (Telephone Group)

J. B. James, Executive Secretary, Oxychloride Cement Association, Inc., Washington, D. C. (Oxychloride Cement Association, Inc.)

Axel G. Jensen, Director of Television Research, Bell Telephone Laboratories, Murray Hill, N. J. (Institute of Radio Engineers)

Elliot P. Knight, Superintendent, Engineering Department, The Employers' Group, Boston, Mass. (Association of Casualty and Surety Companies)

M. M. Lawler, Assistant Vice-President, Worthington Corporation, Harrison, N. J. (Air Conditioning & Refrigerating Machinery Association)

George L. McCain, Research Administrative Secretary, Chrysler Corporation, Detroit, Michigan (Automobile Manufacturers Association)

Dr. Herbert Meyer, Motion Picture Research Council, Inc., Hollywood, California (Motion Picture Research Council, Inc.)

John A. Neale, Chief Engineer, National Board of Fire Underwriters, New York (Fire Protection Group)

R. C. W. Peterson, Peterson Engineering Company, Toledo, Ohio (American Society of Tool Engineers)

Arthur E. Pringle, II, Vice-President, The Pringle Electrical Manufacturing Company, Philadelphia, Pa. (National Electrical Manufacturers Association)

T. M. Robie, Manager of Quality Control, Fairbanks, Morse & Company, Beloit, Wisconsin (Diesel Engine Manufacturers Association)

Frank P. Tisch, Chief Engineer, Pheoll Manufacturing Company, Chicago, Illinois (American Society of Mechanical Engineers)

Dr. Cary R. Wagner, Vice-President, General Aniline & Film Corporation, New York (Synthetic Organic Chemical Manufacturers Association)

E. H. Weaver, Manager of Purchases, Union Oil Company of California, Los Angeles, California (National Association of Purchasing Agents)

C. W. Wright, President, American Railway Car Institute, New York (American Railway Car Institute)

Standards Council Recipients of the Service Award at the National Standardization Conference with ASA President Roger E. Gay (left to right)—Frank P. Tisch; George L. McCain; E. H. Weaver; W. E. Bloecker, representing H. R. Huntley; R. C. W. Peterson; J. H. Foote; T. M. Robie; A. G. Jensen; H. C. Dean; Roger E. Gay.

A New Approach to Cost Reduction in the Building Industry

Colonel Willard T. Chevalier, Executive Vice-President, McGraw-Hill Publishing Company, New York, Moderator at this meeting, introduced the session with the comment that since the cost of building is rising more rapidly than other costs, we are having to build smaller buildings and fewer buildings. We are not providing adequate shelter which people can afford.

The Modular Method of dimensioning building materials is recognized by leaders of the building industry as the most promising approach to reducing the cost of construction, he said. It supplants haphazard dimensioning, traditional in building construction.

As a simple example, an old-size window might have been any number of feet-and-inches in width; an old-size brick might have been any length. Only by sheer chance would a window opening be just so-many bricks wide. It would be a certain number of bricks *plus a fraction* of a brick, and the designer relied upon the bricklayer to make "brickbats" of the right size so the window would fit into that brick wall. This practice still persists in this progressive land of ours.

By contrast, in the Modular Method of dimensioning a modular window is so-many modules wide; a modular brick is so-many modules long. Through their relation to

the same module, the window and the bricks now have a dimensional relationship to each other. The designer can now locate the window—and indeed lay out the entire building—so that the many parts will assemble harmoniously, fitting together with a minimum of fuss and feathers on the job.

The possibilities for construction efficiency by this coordinated approach are tremendous.

A growing number of buildings now stand which the designer laid out by the module and which the contractor built of modular products.

Although the consensus seems to be that the next generation will know the Modular Method as the only way of dimensioning buildings and building units, it has not yet in these six years halfway reached that goal.

Sufficient experience has been accumulated to answer the question "How well does the Modular Method really work out in practice?" We may perhaps move on to the next question "What possibilities of the Modular Method need further exploration? Can we foresee the ramifications of the general use of this system by the American building industry within a decade or so?"

Arthur Bohnen *J. L. Simmons Company, Incorporated, Chicago, Illinois; representing the National Association of Housing Officials and the National Association of Real Estate Boards.*—Modular coordination is the greatest single need in the struggle to develop building from a craft to an industry.

If his product is designed to a dimensional coordinate, the manufacturer has a much better opportunity to be competitive in his market and to reach many facets of that market which are closed to him because now his merchandise does not fit into any end product.

Financing agencies have heretofore been reluctant to accept new and "unconventional" ideas. They should recognize the logic of standardized components assembled into a completed product, and the greater security this gives the complete product they finance.

Standardization of his components would facilitate the manufacturer's cost accounting; control of accurate performance on the job; and production schedules. A higher degree of control of both labor and material would be possible.

The realtor would have something more to offer for the buyer's dollar than he has at present. He would have sound design to talk about, long-term value and quality to demonstrate.

If it were available to him, John Householder could shop for the type of family shelter which he needs and more readily find it in standardized housing, properly designed by competent skilled people and assembled from the quality merchandise of mass-produced components, at lower prices than it is now possible for him to do. Today he takes on the chore of maintenance himself. How much simpler for him if the elements of his dwelling were of standardized components for which parts were readily available.

F. M. Hauserman *President, E. F. Hauserman Company, Cleveland, Ohio; Member, Board of Directors, The Producers' Council.*—As a manufacturer I look to modular coordination as a device for applying badly needed standards to the building industry.

By giving a common reference medium for all items in a building it sets the stage for standards in a realistic way that has never before been possible in this divergent industry.

Fundamentally, all cost reduction boils down to two common denominators: (1) saving material; (2) saving time.

For too long building products have been considered as individual items—now with the concept of modular coordination the over-all coordination of one material with another is bringing significant savings in building costs.

My firm makes movable steel partitions and wainscot, which we manufacture and install complete in office and industrial buildings.

When a building is designed and drawn up with modular coordination in mind it reduces waste of time and material all along the line.

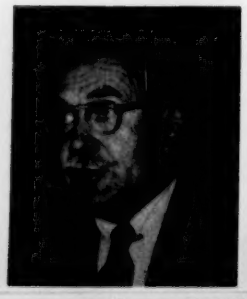
First, the thinking of all individuals working on the job seems to "stay in the groove" better.

There is less time wasted in the engineering stage trying to guess what the architect's detailer had in mind.

Two jobs were compared recently. One had plans on a modular basis, the other had a conventional set of drawings. The modular job took approximately 20 percent less time to get to the shop, with noticeably less fuss and confusion.

Savings in manufacturing are due to the greater percentage of stock items. Stock items are cheaper because of volume of production. They are better because they are given more thought and attention than special items of which only a few are to made; they are better tooled; and better packaged.

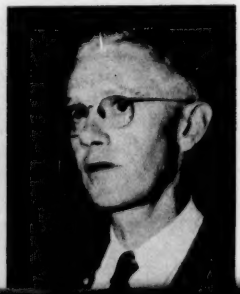
Arthur Bohnen



F. M. Hauserman

William S. Kinne, Jr

William H. Scheik



Colonel Willard T. Chevalier (left) moderator, and the audience that attended the Building session

You can help improve the value received for your construction dollar by publicizing modular coordination. If you are building a home or responsible for plant or commercial construction, insist that the planning be done on a modular basis and that modular techniques be followed throughout. You will thus be saving your own money, and also helping the construction industry to do a better job for our national economy.

William S. Kinne, Jr *Professor of Architecture, University of Illinois, Urbana, Illinois.*—"Modular Coordination" is an awesome term that scares young people, although subsequently they will grasp, use, and apply the basic idea naturally and effortlessly. "Modular Coordination" is a useful tool, but not too appealingly packaged. Therefore, the idea is talked about under the heading of "Building Materials Standards." This indicates no rejection of the idea. In teaching, repeated emphasis is placed on the advantages of modular graphic representations as the most logical and direct way of carrying rough design and planning ideas through to contract working drawings, and thence to construction and fabrication in the shop and at the site.

In the theoretical atmosphere of the school of architecture the principles can be applied more objectively than they can by the designing architect or engineer or constructing builder, who is faced by specific problems of materials, sources, erection procedures.

From experience as designer of several fairly recent buildings predicated on the modular idea, the speaker is an enthusiastic teacher-proponent of the modular or building materials standards approach. He believes, however, that it is making its best showing in permanent incombustible buildings; that it is least successful for wood framework; that it is being well adapted to large-scale structures but less effectively used for smaller building units.

Numerous pro and con comments are being published as a result of the growing accumulation of experience. These vary from solidly enthusiastic to solidly negative.

Many of the most well taken criticisms point to needless hurdles caused by incompletely or inexpertly compiled working drawings and details; and by inadequacies or inconsistencies in supply sources for materials and building components used in modular buildings. These can be and will be taken care of in due time by the vital building industry.

In classroom lectures, students are told: "The idea is new; it is based on sound principles; it is enough in its infancy that it does not work 100 percent in practice, nor has it been accepted uniformly.

"But—in your professional lifetime, modular design and construction will be the norm."

William H. Scheick *Executive Director, Building Research Advisory Board, National Research Council.*—What bothers me about modular coordination is the way it persists in being more like a religion than a science. People who have anything to do with modular are either believers or heathens.

What it will take to sell modular and convert the hard-boiled heathen is not catch phrases, but evidence that modular pays.

Most of the objections to modular sound like alibis and excuses by the heathens.

Most of the reasons for it sound like faith and trust by the believers.

Could we take a new tack? Could we help Bill Demarest get some proof of savings? Could we smoke out and lick a few honest-to-goodness bugs?

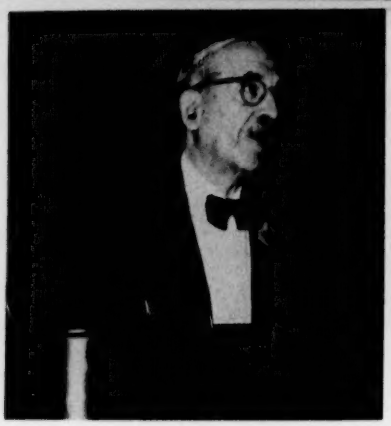
If there is any research needed here, it is the on-the-job kind, not the test-tube and laboratory variety. First, I urge the collection of data to prove savings, especially in man hours in the drafting room and on the job. This isn't easy when "before and after using modular" records are not available. But unit costs and averages may suffice.

I also urge a concurrent attack on specific technical problems and elimination of "hear-say" objections by *proof* of their non-existence.

I would lay emphasis on the study of modular frames in wood for houses and steel for large buildings. We need to bring other aspects of modular design to a par with masonry.

With the completion of current research projects I believe we will have an adequate supply of definitive and educational material. Before more money is spent on similar studies, I urge adequate support for collection of every tangible proof of modular savings that can be found, and a "clean-up" of technical problems shown up in practice.

I recommend a concentration and coordination of all efforts and funds through the office of the AIA Secretary for Modular Coordination.



Dr Arthur M. Greene, Jr, told how the ASME Boiler Code was developed and how it has cut down the number of boiler accidents since the first edition in 1914.

Henry B. Oatley, chairman, ASME Boiler Code Committee (left), accepts scroll for outstanding service from ASA President Roger E. Gay, as R. J. S. Pigott, president of the American Society of Mechanical Engineers, looks on.

The ASME Boiler Code Committee and Its Work

Following a precedent established last year, a scroll for outstanding service was presented during the Standards Council meeting to a group selected because of its notable contributions to standardization. The Boiler Code Committee of the American Society of Mechanical Engineers was that group.

"ASA's function is to advance standardization work through the technical societies and trade associations which comprise the ASA federation, as well as other groups concerned with standardization activities," Mr Gay said in presenting the scroll. "ASA has been very proud to promote a knowledge of, and use of, this Code. Over the years, it has exerted many efforts in this direction. The ASME Boiler Code, through its extensive use and uniform administration, is a national standard in every sense of the word."

Dr Arthur M. Greene, Jr *Dean Emeritus, School of Engineering, Princeton University; Consultant engineer for power and manufacturing companies.*—From the time of the practical application of steam for prime-movers in 1705 and 1769, boiler explosions occurred in increasing numbers. By about 1855 Associations of Manufacturers were formed in Great Britain and in Europe for the inspection and insurance of boilers. In this country, the Hartford Steam Boiler Inspection and Insurance Company was chartered in 1866. As steam was applied to vessels, rules dealing with the operation, care, or construction of marine boilers were issued by the Marine Underwriters and the Governments of Great Britain and the United States. The Steamboat Act of 1852 included original rules and regulations for the design and construction of marine boilers.

The serious explosion of a boiler at Brockton, Mass., in 1905 and one at Lynn, Mass., in 1906 caused the Legislature of the Commonwealth of Massachusetts to establish a Board of Boiler Rules in 1907. The Board published its first rules in August 1907. Ohio followed in 1911.

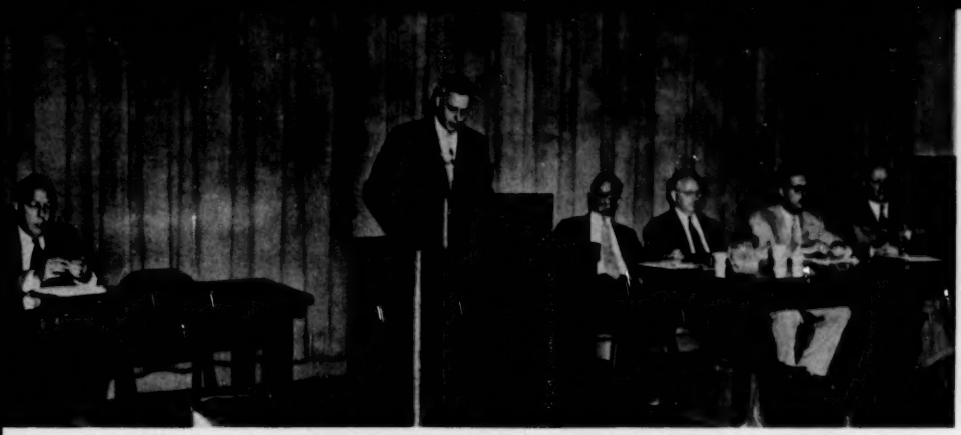
The Boiler Code Committee was appointed by the Council of the American Society of Mechanical Engineers in 1911, and the ASME Boiler Code was issued in 1914. This action resulted from the long-cherished desire of Colonel E. D. Meier, President of the Heine Safety Boiler Company and President of ASME in 1911, for a set of rules that would appeal to all of the states. He believed that a code formulated by ASME would appeal to all because of the reputation and standing of the Society with its nation-wide membership without sectional bias and because of its ability to secure from its membership men of broad training and wide experience.

By May 1952, 28 states and territories, the District of Columbia, the Canal Zone, 15 municipalities of the United States, and eight provinces of the Dominion of Canada had adopted one or more sections of the Code. The Code now has nine sections, totaling more than 1,000 pages.

The Boiler Code Committee, with 24 members, has met nine times a year until recently. Its Executive Committee meets frequently, permitting committee action during the summer and between regular meetings.

In the 37 years of administration the Committee has considered 1,154 cases. When the question affects a large group within which there is a difference of opinion, a conference or even a public hearing is held.

In all of the work of the Boiler Code Committee, cooperation and safety have been two of its most cherished considerations in reaching decisions. It points to the low record of serious boiler explosions since 1916 even with the great increase in the number of boilers, many of them of enormous size.



Speakers at the CEOM session (left to right): Hampton M. Auld; Donald G. Vaughan; T. E. Veltfort (chairman); Paul Arnold; S. A. Greenberg; Harvey T. Hill.

The Engineering Significance of Standards

An Open Meeting of the Conference of Executives of Organization Members of ASA

T. E. Veltfort, Manager, Copper and Brass Research Association, New York, and Chairman, CEOM, opened the meeting by explaining what CEOM is. Standardization is primarily the work of technical societies and trade associations, he explained. It is therefore natural that the working membership of the ASA consists of such organizations. More than 100 organizations of that kind are members of ASA today.

The purpose of CEOM is to provide a forum through which executives of these organizations can discuss problems of mutual interest in standardization, as well as the work of ASA. Whenever desirable, they can also develop recommendations for consideration by ASA. All that is asked of chief executives of member-bodies and associate members who become members of CEOM is their cooperation in furthering the objectives of ASA.

In keeping with the general theme of the Centennial of Engineering, this session of CEOM was devoted to the engineering significance of standards.

D. G. Vaughan *How Standards for Safety Can Help Reduce Insurance Premiums—Improve Industrial Relations. By D. G. Vaughan, Manager, Engineering and Inspection Department, The Aetna Casualty and Surety Company.*—Why are insurance companies interested in American Standards? First, they help materially in bringing about uniformity in safety laws and regulations; second, they set up a generally recognized and universally accepted set of rules and regulations concerning machine and operational safeguards; and third, they help materially to reduce accident and insurance costs.

Although there is some uniformity in state laws as evidenced by the U. S. Department of Labor's study of the American Standard codes for power presses, woodworking machinery, and rubber mills and calenders, nearly half the states still have no proper safety regulations covering these machines. The National Safety Council Committee on Machine Guarding and a similar committee of the Institute of American Government Labor Officials are working jointly in an effort to bring about further uniformity.

Insurance companies are interested in further acceptance of American Standards for machine guarding. Our Engineering Departments make hundreds of thousands of safety inspections each year. If our engineers have to work under hundreds of different and varying regulations from municipality to municipality and from state to state, the task is very difficult, and our suggestions are hard to sell.

When our insurance engineers discuss safety recommendations with an owner, their task is much easier where American Standard safety codes have been adopted. Where there is no law to help us, we usually quote and show the American Standard code that applies. We point out that various associations have had members as representatives on the Code Committee that promulgated the regulations. We show him that American Standard codes are nationally accepted and recognized and that our recommendation is in line with the code. This makes it easier for us to make the risks we inspect better risks. In the casualty business, rates are based on averages for certain classes of business or industry. A certain industry or a trade makes its own rates through its experience in its state. Retrospective Ratings have been accepted by most state insurance departments for use with the medium or large sized operations. A standard premium is set up. The insurance carrier is alloted a fixed percentage of this for his costs of operation. This is the basic premium. The final premium is the sum of the basic premium and the incurred losses multiplied by a loss conversion factor for claim-handling expense. If the com-

pensation premium is estimated at $40,000 per year, the insurance carrier might be allowed $10,000 for its costs; $30,000 would be left with which to pay losses. If the losses amount to $35,000, then the company buying the insurance would owe the insurance company an additional $5,000. On the other hand, if through a good safety program and use of American Standards, the company operated with accident costs or losses of $15,000, then the insurance carrier would give this concern a return of $15,000 for the year. Such results have been achieved.

We in an insurance company are interested in all this because we want to sell more insurance, more protection against the hazards of our modern industrial life. As long as the price of this protection remains reasonable, the market is there. We are also interested in the humanitarian side of the picture. Not only can we reduce insurance costs but we can save lives, minimize human pain and suffering, and make our industry a safer place in which to work.

Hampton M. Auld *What Standardization Has Meant in the Economics of Engineering and Design and Utilization of Products. By Hampton M. Auld, Executive Secretary, Recorder-Controller Section of the Scientific Apparatus Makers Association, New York.*—Products manufactured by this industry are used primarily in research, industrial processing and power plants, and include industrial thermometers, temperature, flow, and pressure indicators, and recording and controlling equipment, pyrometers, potentiometers, electronic test equipment, and many others.

Nine years ago, manufacturers of process control equipment organized as the Recorder-Controller Section of the Scientific Apparatus Makers Association.

The need for work on standardization and simplification was soon recognized. At the first meeting of engineering executives from all member companies, called together to explore the possibilities of standardization, a resolution was passed to take out an association membership in the American Standards Association. It was evident that a need and desire for a well-thought-out program of standardization existed.

One committee has met 52 times since 1946. It is composed of seven top engineering executives from seven member companies scattered in different parts of the country. They met at great expense to themselves and their companies. Five standards on definitions and terminology have been developed, approved, and circulated. They have received wide acclaim.

When a group of competitors can eventually align their thinking and terminology to an agreed-upon standard and on that basis proceed toward design and dimensional standards, you have the essentials of a standardization program.

One never looks back over interminable discussions and the time and money they represent, without being dissatisfied with what seems to be a relatively small output. However, this is the price of avoiding future situations that become less and less reconcilable as time passes.

Standardization must be effected without stifling invention: Standardize where you can standardize but do not attempt to standardize in areas in which significant improvement can be made. Eliminate by standardization those differences which are insignificant but do not prevent worthwhile improvements from being exploited.

Since 1945, 12 committees have worked on various standardization projects. Nine standards have been developed. Many comments have been received complimenting us on the program of our engineering committees.

T. E. Veltfort, manager of the Copper and Brass Research Association, and chairman of the Conference of Executives of Organization Members, opened the session on "Engineering Significance of Standards." At left are principal speakers Hampton M. Auld and Donald G. Vaughan.

Paul Arnold *How the Photographic Industry Initiated and Developed Its Standards. By Paul Arnold, Assistant to the Technical Director, Ansco Division, General Aniline and Film Corporation, Binghamton, New York.*—Photographic standards in America got their start in the motion picture industry. The American Society of Motion Picture Engineers was organized in 1916 with standardization as one of its founding principles. Today there are 66 American Standards for motion pictures and more in process. These 66 standards testify to the value that the motion picture industry places on national standards.

The motion picture industry, by getting into technical trouble internationally, learned the hard way the advantages that national standards can have over industry standards, over society standards, or association standards. They came to realize that international standards problems can only be dealt with effectively by active participation in a national standards program.

An SMPE standard for 16mm sound motion picture film in draft form had been circulated in this country and abroad. It was finally adopted by the Society and published in 1934. The American proposal was adopted in England but motion picture projector designers in Germany misinterpreted the drawing. A German national standard was set up that turned out to be a "mirror-image" of the SMPE Standard. The German standard was presented to a meeting of the educational branch of the League of Nations held in 1934 to discuss the use of motion pictures in education. The conference resolved to adopt the German 16-mm sound film standard. The SMPE, who had not been represented at the meeting, protested. Salvaging the millions of feet of valuable film produced according to the SMPE standard, the American-made projectors, and the tools with which they were manufactured was a matter of considerable economic importance.

The American Standards Association took up the problem at the request of the motion picture industry, organized Sectional Committee Z22, and sent American delegates to an International Standards Association meeting in Paris. This meeting agreed upon a procedure for handling international standards for 16-mm film and declared: "As from this date the National Standardizing Associations of the several countries concerned are requested to conform to the standards of the American system known as the 'SMPE'."

American national standards in the photographic field originated as the direct result of international standards activity. The American Standards Association was invited to become the prime mover in TC 42, organized by ISA to deal with general photography. At that time the USA had no national program of its own for photographic standards. Sectional Committee Z38 on Photography was organized in 1939 with the Optical Society of America as sponsor. It produced more than 180 American Standards in 12 years before it was reorganized into four sectional committees dealing with separate subjects.

The panel on "How Three Industries Initiated and Developed Their Standards" (left to right) T. E. Veltfort, chairman; Paul Arnold, photography; S. A. Greenberg, welding; Harvey T. Hill, diesel engines.

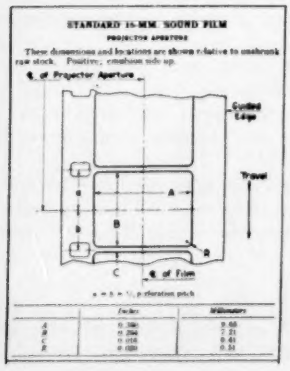
Photographic manufacturers have realized substantial savings from the national standards activity. One example is that of American Standard dimensions for amateur roll films, adopted in 1943, revised in 1950.

1. Simplification was accomplished by recognizing the seven sizes in most common use.

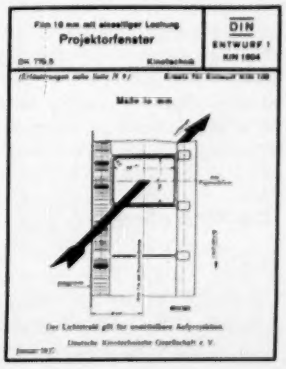
2. Designers of cameras, developing equipment, and photographic printers for the first time were supplied with authoritative data on roll film dimensions so they could provide proper accommodations in their equipment. Interchangeability was assured.

3. Various size designations used by different film manufacturers were replaced by a standard system of size nomenclature. This has been a convenience to users and to dealers and helps prevent confusion and error in size selection at the point of sale.

4. Minimum dimensions were set in the standards wherever possible, leaving each manufacturer free to give extra tolerances as required by his own manufacturing conditions. These minimum dimensions assured correct operation of the film spools in properly designed cameras.



Left: This SMPE standard for orientation of 16-mm Sound motion picture film in the projector, published in the *Journal of the Society of Motion Picture Engineers*, November 1934, was misinterpreted in Europe. As published, the standard included two paragraphs explaining that in the projector the base (not emulsion) side of the positive faces the light source. "Viewed from the light source, the sound track is to the left," it explains.



Right: The German national standard for 16-mm sound film projection published in January 1937 after the ISA meeting at Paris recommended the SMPE standard as a universal method.

In the case of one size of film this American Standard saved the American Photographic Industry some $158,000 in 1951.

Harvey T. Hill *How the Diesel Engine Manufacturers Initiated and Developed Standards. By Harvey T. Hill, Executive Director, Diesel Engine Manufacturers Association.*—Ours is a relatively new industry in this country. It did not get much of a start here until after the basic patent of Dr Diesel ran out, less than 40 years ago. About 25 years ago our national Association was organized, and about 20 years ago we first began to give some thought to the need for standards.

The first pamphlet, *Standards of the Diesel Engine Manufacturers Association*, was published in 1930. It was prepared by a group of engineers representing the manufacturers of Diesel engines, and was produced to be of service to Diesel engine users, prospective buyers, and consulting engineers.

These standards have been revised and republished three times—in 1935, 1946, and 1951. The 1951 edition, *Standard Practices for Low and Medium Speed Stationary Diesel Engines*, is a handbook of modern practices dealing with the proper selection, purchasing, application, acceptance testing, operation and maintenance of Diesel and dual fuel engines and associated equipment. It has been particularly useful to all concerned in the preparation of specifications for the purchase of new equipment. The outline of field testing, sea-level, and altitude rating standards and fuel consumption guarantees have eliminated many of the misunderstandings previously encountered.

Because of our happy experience in connection with our first standards for stationary Diesel engines, our Association decided to publish a book of standards for users of marine Diesel engines, prospective buyers and naval architects. We called this book *Marine Diesel Engine Standards*. It deals with the building of Diesel-powered ships and is meant to serve naval architects and shipbuilders. The first edition was published in 1940.

The second (1948) edition of the marine book is *Marine Diesel Standard Practices*.

After World War II a lot of our Diesel engines were going to Central and South America and other Spanish-speaking countries. To serve customers in this field, in 1948 we translated our 1946 edition of *Standard Practices for Low and Medium Speed Stationary Diesel Engines* into Spanish, bringing the material up to date. As far as we can learn, no group of foreign competitors has offered such a service in this field.

S. A. Greenberg *How the Welding Industry Initiated and Developed Its Standards. By S. A. Greenberg, Technical Secretary, American Welding Society.*—From the very beginning the American Welding Society has included standardization in its program. In the earliest days standardization was on the basis of immediate need. As each project was completed the activity was closed to be renewed again when a new need arose. Today AWS has about 100 technical committees and subcommittees which can be divided into four basic groups:

One, fundamentals in welding, including symbols, definitions, filler metal, safety, testing

Two, training, inspection, and control, including methods of inspection, qualification, minimum requirements for training welders

Three, processes, including resistance welding, metalizing, brazing, and soldering

Four, industrial applications, including building, bridges, marine construction, storage tanks, piping and tubing, automotive construction, railroads.

Our standardization activities serve several purposes. First, they provide specifications which can be used as a basis of contractual relationship between purchaser and supplier. Second, they provide codes and design requirements which can be used to regulate engineering projects involving manufacture and construction. Third, they provide information in the form of recommended practices reflecting latest information on welding intended to be useful as a guide in preparing individual requirements for a specific engineering project, but not intended to be used as mandatory requirements for such a project. Fourth, they provide the membership of technical committees with a means for direct interchange of ideas, information, and experience.

In addition, the Society cooperates with all organizations concerned with standardization in which welding is included. Organizations engaged in standardization request AWS to recommend provisions for welding. For example, the American Standard Code for Pressure Piping contains welding provisions based on AWS recommendations.

Through standard specifications, needless and costly variations previously specified in purchasing welding equipment have been eliminated. The filler metal specifications prepared jointly by AWS and ASTM are an example. They started with a crude specification covering a bare steel wire of a nominal chemistry. Now there have evolved 70 specifications, with more being prepared, covering different types of welding rods, electrodes, and brazing filler metals. Each spells out in detail the properties and physical dimensions of a group of filler metals. They represent a meeting of minds of both consumers and producers.

Standard tests for the qualification of a welder have eliminated needless differences and have saved costs.

Standardization of welding codes and design requirements for engineering construction has similarly saved time and money.

Standard specifications such as the AWS rules for field welding of steel storage tanks and AWS code for building and AWS specifications for welding highway bridges have provided sound, uniform requirements which are almost universally used.

Recommended practices for resistance welding, for metalizing, for welding gray iron castings, and rules for welding piping and marine construction make it possible

for the engineer to set up the best welding requirements for a specific application.

H. F. Reinhard *International Acetylene Association of New York; Chairman, Small Business and Associations Committee, Industrial Conference, National Safety Council.*—Four years ago there were formed within the National Conference on Safety in Industry two committees. One was to consider the small business accident problem. The other was to consider associations and the part they might play in promoting industrial safety. These two committees have now been combined into one, known as the Small Business and Associations Committee..

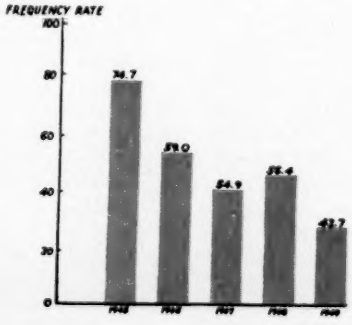
In its program this committee has considered the fact that there are somewhere around 15 or 16 thousand occupational deaths each year, something like 2 million occupational lost-time injuries, the cost of which is something around 2½ billions of dollars. Ninety percent of all plants employ less than 100 people, and these 90 percent employ only 25 percent of all the workers. These 25 percent of all workers have 40 percent of the accidents.

Studies of the cost of all accidents show that the average cost is $534. The average compensation paid was about $369 in one industry study.

Ivan LeGore *Manager, Accident Prevention Bureau, Portland Cement Association; Vice-chairman, Small Business and Associations Committee, Industrial Conference, National Safety Council.*—Portland cement manufacturers have demonstrated during the 36 years during which the Association has had an accident prevention program that disabilities and suffering from accidents can be prevented by consistent educational and engineering work. Loss of earnings and production time by employees can be reduced to a minimum. What is good for employees has been found to be very good for the entire industry.

Our membership consists of 147 manufacturing plants in some 33 states and five Canadian provinces. The past 36 years have seen their occupational injury frequency rate reduced 83 percent.

The American Assn of Oil Well Drilling Contractors' safety program pushed accident frequency rates down 13 percent in 4 years.



For the year 1951 the lowest accident frequency rate in the history of the Cement Association's organized safety work was achieved at 4.22 injuries per million manhours worked. That was about half the rate of all 40 industries reporting to the National Safety Council.

Our success results from a carefully planned and humane approach to the problem of safety. Revision of work methods through engineering studies is a basic procedure. This is combined with mechanical safeguards where needed, plus persistent safety education, safety training, and competition for low accident records among employee groups. Full and complete use is made of American Standards for safety.

Members of the Cement Association can say from long experience that means to prevent accidents are inseparably linked with productivity. Preventive measures taken are not an expense but an investment that pays big dividends.

In one case reported to us, a cement company insurance rate dropped from $3.65 per $100 pay roll to 85 cents per $100 pay roll.

We have been instrumental in helping other associations get started with safety programs. The American Association of Oil Well Drilling Contractors, for example, brought their compensation rate down 13 percent in four years.

Al Baltzer *Director, Associations and Small Business program, National Safety Council.*—Insurance companies and other agencies find it difficult to give good accident prevention service to small companies. Within the past year I have been assigned to the small business program on a full-time basis.

We have to work with local safety councils, with trade associations, and with professional societies, in an effort to reach the small plants.

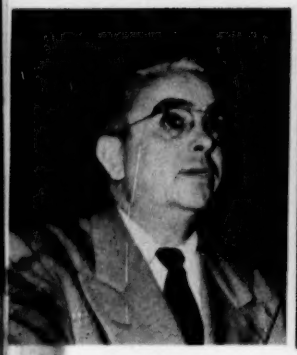
For example, we work with the American Society of Mechanical Engineers. The National Safety Council and the American Society of Safety Engineers provide technical assistance in the form of publications, manuals, data sheets, *National Safety News* Magazine, engineering news letters, etc. Insurance companies help through magazine articles, statistical studies, and consultation service.

The American Standards Association and the government agencies give valuable service by developing safety codes. Through participation on these code committees, the association executives or professional society people gain knowledge and experience.

In turn, a society such as ASME can talk about safety work in its own publications and in local safety conferences. Societies and associations can work with machine manufacturers, because if machinery can be guarded at the source it is far better than makeshift, jerry-built guarding on the job, and usually is a lot cheaper.

Within the past year we have gotten a couple of dozen associations started on safety programs. Some have gone to the extent of hiring a safety director, and many have set up safety committees.

The Chemical Industry's Approach to Procurement Standards



W. T. Nichols

Granville M. Read

Granville M. Read *Chief Engineer, E. I. du Pont de Nemours & Company.*—In the chemical industry construction materials must withstand highly corrosive conditions and wide swings in pressure and temperature fluctuations.

Owing to the rapid change of process and products produced, together with its inherent complexities, the chemical industry has been slow in accepting standards. The du Pont company concerns itself with standards for structural, metallurgical, and general utilities, as well as standards that apply to the design of process, auxiliaries, and field construction, and maintenance of buildings, equipment, and general service facilities.

Formation of a Chemical Industry Correlating Committee within the framework of ASA in 1950 was the first major step in standards consciousness by the chemical industry. Its program does not include chemical products per se.

The growth of the chemical industry in the past century has been unprecedented. Today the chemical and allied products industries have an investment of nearly 13 billions; an annual value of sales of over 15 billions.

The role of standardization seems clear: we should maintain a technical exchange of viewpoint with our sister industries through our Chemical Industry Correlating Committee which functions as a classifier of those things which are exchangeable among our various industries.

In 1947 when the shortage of trained engineers began to pinch, the du Pont Company decided one approach was to establish a strong standardization organization, manned by competent personnel. This is our Standards Committee, composed of one representative each from design, plant engineering, construction, safety, purchasing, and from each industrial department and each auxiliary department. The chairman is from the Engineering Department. Our experience has indicated that saving in engineering manpower is equivalent to some 7 percent of our total design force. It has permitted faster drawing schedules, less revisions, and substantial reductions in the elasped time from the conception of a project until it is put into operation.

For many years each of us in the chemical industry ordered materials and equipment based on our own individual specifications. We required changes from the manufacturer's standard product. Every time we deviated from standard we ran the cost up; still more serious was the delay in equipment deliveries.

If we scan our designs and make our recommendations in the light of good standards and practice, the cost of plant equipment will be materially reduced.

My company is a strong believer in procurement standards. Since inception of our present standards activity in 1947, for every dollar spent for standards, we have saved four dollars net.

Five years ago standards were just so many words; today they mean dollars and cents saved through their application to our industry.

Frank S. G. Williams *Manager of Engineering-Standards, Taylor Forge & Pipe Works.*—Since the activities of the Chemical Industry Correlating Committee are limited to matters dealing with the mechanical equipment used by the chemical industry rather than the products of the industry, the discussion will be centered on the reactions of equipment suppliers, and the pipe, valve and fittings industry in particular. This industry has been an ardent supporter of standardization during the major portion of this century.

As new products were developed, the Manufacturers Standardization Society of the Valve and Fittings Industry consistently worked toward conformity of dimensions aimed at interchangeability in the consumer's plant. Standards formulated in the Society have, after a period of field trial and testing, been submitted to the appropriate sectional Committees of the American Standards Association for critical review aimed at eventual adoption as American Standards.

It has been our experience that standards developed under this procedure have been practical and have with few exceptions been mutually acceptable to both consumer and producer. The American Standards Association Council table provides an unbiased meeting ground for the frequently conflicting interests of producer and consumer. Although there have been many differences of opinion and many struggles, I am proud to have participated in a work where the principles of fair mindedness and consensus have achieved so much. In many instances it has taken what might have appeared to be an undue time, but when that time was spent in

reconciling very deep-seated differences of opinion in place of settling a matter by edict, I have always been satisfied that the time had been reasonably spent.

We are hopeful that the CICC will succeed in winning the support of the chemical industry for the activities of the American Standards Association and the great engineering societies. If this is accomplished, we would expect to see a greater participation of mechanical engineers from the chemical industry in the sectional committees and code committees.

It is probable that CICC will find from time to time that the chemical industry has need for standardization in fields not presently covered. It will undoubtedly recommend the formation of new sectional committees to handle these problems.

J. G. Henderson *Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation; Chairman, Chemical Industry Correlating Committee, American Standards Association.*—The Chemical Industry Correlating Committee, which came into being in May 1950, provides machinery whereby responsible technical personnel of the chemical industry can get together under the procedures of the American Standards Association on many sorely needed standardization projects. Through this machinery they can, on a consensus basis, establish the specific standardization requirements of the industry.

CICC was organized following an appeal by the Manufacturing Chemists' Association because engineers were faced with mounting difficulties in procurement of materials and equipment. Need for adjusting the materials and commodities demands of separate chemical companies to a rational basis was recognized. Even more important was conservation of national resources.

CICC includes representatives from the American Institute of Chemical Engineers, American Society for Testing Materials, Association of Casualty and Surety Companies, Compressed Gas Association, Manufacturing Chemists' Association, and the Synthetic Organic Chemical Manufacturer's Association.

Working subcommittees are:

Stainless Steel Pipe and Fittings—This subcommittee has successfully concluded its initial assignment, to have Schedule 5S for pipe incorporated into American Standard B36.19. It is now concerned with extension of the dimensioning system of various Schedules to cover pipe of other materials, such as copper, aluminum, and nickel alloys.

Stainless Steel Analyses—This subcommittee will soon recommend to the American Iron and Steel Institute and American Society for Testing Materials that a new standard analysis of stainless steel be included for use within the chemical and process industries.

Valves and Fittings for Fluids in Chemical Process Lines—Inherent complications cause this subcommittee much work and consume considerable time. It is planned that its work will be submitted ultimately for inclusion in American Standard Code for Pressure Piping, B31.

Unfired Pressure Vessels—This subcommittee is developing specific recommendations to the ASME Boiler Code Committee concerning unfired pressure vessel construction.

The CICC welcomes all suggestions regarding possible standardization projects.

In most cases where important American Standards fail to provide for the special needs of the chemical industry, this failure can be laid at the doorstep of the industry itself. Certain sectional committees of ASTM, for example, have been dominated by producer groups; however, this is not by choice of ASTM. Chemical industry participation has at times been urgently sought but has not been forthcoming.

One of the often-voiced criticisms of standards is that they do not completely and specifically do a particular job. It must be remembered that the mere existence of a standard does not require its use. As a tool, the potential user must determine its adaptability to a particular job and, if found suited, the user may then incorporate it into his specifications, wholly, in part, or with exceptions.

(Left to right)—J. G. Henderson; W. T. Nichols; F. S. G. Williams; Granville M. Read. Mr Nichols was moderator of the session. He is director of the General Engineering Department, Monsanto Chemical Company, St. Louis, Mo.

Standards From Other Countries

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received. For the convenience of our readers, the standards are listed under their general UDC classifications.

389 Metrology. Weights and Measures

Germany	***DIN***
Preferred numbers. Millimeters	3,B1.1
Portugal	***IGPAI***
Lay-out and sizes of Portuguese standards	P-2/3
Preferred numbers	P-28

543.3 Water Analysis

France	***NF***
Three standards on tests of water: determination of small quantities of free oxygen, colorimetric test for ion nitrates and for ions of chlorine	T 90-010,-012,-014

614.8 Safety Measures

Australia	***A.S.***
Explosives code	CA.23-1952
General principles for safe working in industry	CZ.5-1952
Germany	***DIN***
Drilled fire hydrants	14220

621.643 Conduits. Pipes and Accessory Parts

Spain	***UNE***
Draftsman symbols for pipes and fittings	1062
Tests for water absorption in clay pipes	7052
Pipes and fittings: general index of relevant standards	19001
Pipes. List of nominal diameters in mm and in their inch equivalents	19003
Union, "orientable" type	26056

621.798 Packaging and Dispatch Equipment

France	***NF***
Wooden packing cases for apples and pears. Disposable	H 21-003
Wooden crates for cabbage. Disposable	H 21-010
Four types of crates for different vegetables. Disposable	H 21-012 thru -015
Light crates for fruits and vegetables, "expendable" type	H 21-009
Germany	***DIN***
Ink bottles	6062
Wooden boxes for butter prints	10074
Two types of crates for fruits and vegetables	10092/3
United Kingdom	***PS***
Tins for photographic supplies	1779-1952
Packages for frozen food	1874:1952

621.82 Shafting, Coupling, etc

Austria	***ÖNORM***
Splined shafts and hubs	M 5474
Spain	***UNE***
Standard diameters for transmission shafts	18018

621.88 Means of Attachment, Fastenings

Austria	***ÖNORM***
Hexagon head machine screws, types m and mg	M 5100
Fillister head machine screws	M 5119
Flat, countersunk-head machine screws M5-M52	M 5124
Oval, countersunk-head machine screws M1-M10	M 5128
Round washers for bolts	M 5281
Large washers for joining wood	M 5283, 5284
Square washers for use with I-beams and channels	M 5285
Plain round washers for bolts	M 5291
Different types of lock-washers	M 5292, 5293 5294
Semi-finished pins with small and large heads	M 5422, 5423
Germany	***DIN***
Bolts for multi-leaf springs	4626
Different types of spring washers	6797/8
Cross-recessed screw heads	7962
Mexico	***DGN***
Nails, common	B 47
Spain	***UNE***
Oval-head rivets	27203, h 1, 2
Button-head rivets	27204, h 2
Countersunk-head rivets	27205
Three types of rivet heads	27206
Rivets of diameter under 6 mm	27207

625.1 Railways and Tramways

France	***NF***
Universal joint for valve remote control	F 00-015
Adjustable bolts, three types	F 000-22/3/4
Numbering of axle boxes	F 01-042
Square-head bolts, normal, rough	F 00-012
Large square-head bolts, rough	F 05-001
Triangle-head bolts, rough	F 05-006
Three standards for pneumatic brake hose couplings	F 11-013, -014,-015
Hammer-head bolts	F 52-001
Rail-lifting tongs	F 76-004
Wrench with insulated handle for fish plates	F 76-015
Bolts with cotter wedge	F 76-026
Wedge-driving hammer	F 76-012
Handles for various track tools	F 76-013
Railroad track spanners	F 76-014
Germany	***DIN***
Special washers for carriage springs	5543
Railway carriage bolts	25195
Lubricating holes and grooves	1591
Table of shrink fits in railroad coach construction	25025
Hammer-head bolts	25192
Italy	***UNI***
Wooden sleepers for railways and tramways of ordinary and narrow gage	3163/4
Different types of railway tankers	3166 thru 3169
Conductor's cubicle in street cars, dimensions	3170
Profiles of railroad rails, types 21, 27, 30, 36, 46, 49	3141
Profiles of tramway rails, types Ir, Ic and Ii	3142
Street cars' over-all dimensions, types A and B (tentative)	3162

628.2 Sewers

Germany	***DIN***
Manhole covers for vehicular travel	1234
Cast iron drainage pipes and fittings, light series LNA	1172, 1174-1176, 1394
Israel	***SI***
Cast iron sanitary piping	27/3
Netherlands	***N***
Concrete pipes, round and oval	72
Five standards for different types of sewer drain pots, for street and sidewalk installation	125, 128, 129, 132, 133
Round and square manhole covers	352, 353

668.1 Soap Industry

India	***IS***
Toilet soap	284
Laundry soap	285
Mexico	***DGN***
Liquid soap	R 16-1951

676 Paper Industry

France	***NF***
Manila folders	Q 31-005
Labels, called "American labels"	Q 32-001
Determination of dripping point	Q 50-003
Israel	***SI***
Paper sizes	60/1
Portugal	***IGPAI***
Determination of machine direction of paper	P 16
Sampling paper for analysis	P-21
Hygrothermics of conditioning paper	P 27

744 Technical Drawings

Netherlands	***N***
Drawings for architectural and hydraulic constructions: standard forms for listing wood and stone materials	45
Eight standards for drawings representing various reinforced concrete components	133-140
Aircraft technical drawings. Arrangement of views	V-1810
Spain	***UNE***
Method of preparing drawings for cuts	1040
Sweden	***SIS***
Method of dimensioning	682

HOW TO CHECK OXYCHLORIDE CEMENT FLOORING

by J. B. James

Executive Secretary, Oxychloride Cement Association

APPROVAL of eight American Standards makes it possible for architects and engineers to specify oxychloride composition flooring with assurance of receiving a floor of established performance characteristics. The standards govern composition and methods of placing and finishing the flooring.

Seven of these specifications are on specific types of oxychloride composition flooring. They include solid color trowel finish, decorative terrazzo, industrial granolithic, and others designed to meet specific service conditions. One of the specifications is on the preparation of subfloors. All are being published in booklet form. They were prepared by Sectional Committee A88 on Magnesium Oxychloride Cement Flooring, sponsored by the American Society for Testing Materials and the National Bureau of Standards, under the procedure of the American Standards Association.

The demand for standardization in the field of oxychloride cement flooring has developed as larger quantities of this material are being specified by architects in both government and industry. Also, there was a necessity for establishing definitions of oxychloride cement composition acceptable to both contractor and builder. Heretofore, the mystery which surrounded oxychloride cement flooring confined its use to those localities where it was promoted under various trade names. While these proprietary compositions were similar in appearance and application, their physical characteristics varied, depending on their formulation. And, since there was no yardstick with which to measure the composition, there was no way of knowing what physical characteristics a floor might possess.

In drafting the American Standards for oxychloride cement flooring, Committee A88 considered each floor type with respect to the service conditions it was intended to meet. The several types of composition flooring permit the designer or purchaser to make his selection based on known demands and also permit competitive bidding. Physical requirements were established for each type of flooring composition to assure uniform performance characteristics of the material. Installation procedures that were established reflect the best art and practice of the industry.

The eight American Standard Specifications for oxychloride cement flooring and its installation now being published are:

Installation of Oxychloride Cement Flooring, Specifications for, A88.1-1951.

General Purpose Flooring and Its Installation, Specifications for, A88.2-1952 (Revision of A88.2-1951)

Heavy Duty Flooring and Its Installation, Specifications for, A88.3-1952 (Revision of A88.3-1951)

Base Coat Flooring and Its Installation, A88.4-1952 (Revision of A88.4-1951)

Non-Slip Oxychloride Composition Flooring and Its Installation, Specifications for, A88.5-1952

Terrazzo Oxychloride Composition Flooring and Its Installation, Specifications for, A88.6-1952

Industrial Granolithic Oxychloride Composition Flooring and Its Installation, Specifications for, A88.7-1952

Oxycement Underlayment and Its Installation, Specifications for, A88.8-1952

In the last stages of installation, floor should be troweled at least twice and the final troweling delayed until composition has set sufficiently so that hard troweling will produce a smooth surface of uniform coloring.

CHECK LIST FOR INSTALLATION OF AN OXYCHLORIDE COMPOSITION FLOOR

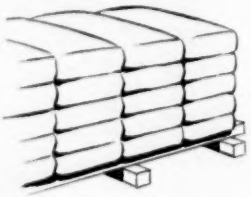
IN LINE WITH AMERICAN STANDARDS A88.1—A88.8

STORAGE OF MATERIALS

Check the pre-mixed dry material to see that it has been properly packaged in containers showing the date of mixing.

Pre-mixed material over 60 days of age should be tested before use.

All dry materials should be stored so as to prevent damaging moisture pickup. Containers should not be placed directly on concrete floor, but raised to provide air circulation.



PREPARATION OF SUBFLOORS

General

Check to see that hot water and steam pipes (except radiant heating coils) are not embedded in subfloor.

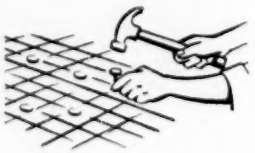
See that all pipes passing through floors are separated by a galvanized sleeve to permit free movement of the pipes.

Dissimilar metals which may come in contact with the oxychloride composition should be coated with bituminous rubber or synthetic resin compositions.

Wood

Be sure subfloor is securely nailed to supporting joists and has no loose knots or broken boards.

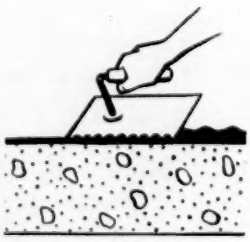
See that metallic anchoring medium is securely nailed on 6 in. centers over asphalt saturated felt. Large-headed galvanized roofing nails should be used.



Concrete

Be sure new concrete has aged at least 30 days, finished to a reasonable true plane and broomed to a minimum depth of 1/32 in.

Oxychloride may be placed over new concrete, cured for 7 days, if a rubber latex or plastic resin bonding medium is applied.



If the floor is placed over concrete on grade where it might be exposed to moisture from below, the concrete should be suitably damp-proofed to guard against capillary moisture. (Such as recommended by National Bureau of Standards in Letter Circular LC 813, January 25, 1946.)

Old concrete should be cleaned of oils and greases and either roughened by chiseling or picking to provide good mechanical key or covered with a bonding medium.

Pick marks should be on 6 in. centers and at least ⅛ in. deep.

INSTALLATION

Mixing

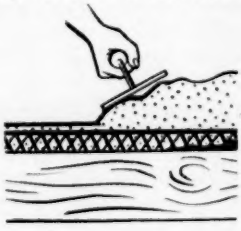
Check the wet mixing equipment to see that it is clean before using.

Check gauging solution for proper strength. Gauging solution should be at room temperature before using.

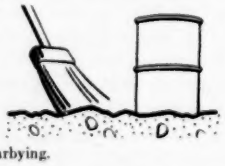
See that periodic slump tests are made to be sure the consistency conforms to specifications.

Air temperature should be within specific limits and should not be allowed to decrease more than 20 degrees for at least 24 hours after placing.

See that thin layer of the composition is thoroughly worked into all recesses and depressions before spreading the flooring mix.



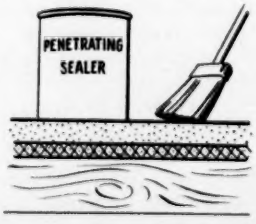
When floor is installed over concrete or other absorptive surfaces where no bonding medium is employed, the surface should be thoroughly dampened with a gauging solution of full strength.



See that the mix is spread to thickness specified and leveled by darbying.

Be sure floor is troweled at least twice and the final troweling delayed until composition has set sufficiently so that hard troweling will produce a smooth, dense surface of uniform color. Terrazzo and industrial granolithic floors are finished with a grinding machine.

See that floor is thoroughly cleaned after final set and sealed with a penetrating sealer of low viscosity.



Sealer should be applied for at least 30 minutes before excess is removed.

AMERICAN STANDARDS

Status as of October 27, 1952

Standards Council — Approval by Standards Council is final approval as American Standard: usually requires 4 weeks

Board of Review—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks

Correlating Committees — Approve standards to send to Standards Council or Board of Review for final action; approval usually takes 4 weeks

Building

American Standards Published—

Sand-Lime Building Brick, Specifications, ASTM C73-51; ASA A78.1-1952 $0.25
Sponsor: American Society for Testing Materials

In Correlating Committee—

Methods of Testing Gypsum and Gypsum Products, ASTM C26-52; ASA A70.1 (Revision of ASTM C26-50; ASA A70.1-1951)
Sponsor: American Society for Testing Materials

Gypsum Wall Board, Specifications for, ASTM C36-52; ASA A69.1 (Revision of ASTM C36-50; ASA A69.1-1951)

Gypsum Sheathing Board, Specifications for, ASTM C79-52; ASA A68.1 (Revision of ASTM C79-50; ASA A68.1-1951)

Standards Submitted—

Concrete Building Brick, Specifications for, ASTM C55-52; ASA A75.1 (Revision of ASTM C55-37; ASA A75.1-1942)

Hollow Non-Load-Bearing Concrete Masonry Units, Specifications for, ASTM C129-52; ASA A80.1 (Revision of ASTM C129-39; ASA A80.1-1942)

Structural Clay Load-Bearing Wall Tile, Specifications for, ASTM C34-52; ASA A74.1 (Revision of ASTM C34-50; ASA A74.1-1951)

Structural Clay Non-Load-Bearing Tile, Specifications for, ASTM C56-52; ASA A76.1 (Revision of ASTM C56-50; ASA A76.1-1951)

Structural Clay Floor Tile, Specifications for, ASTM C57-52; ASA A77.1 (Revision of ASTM C57-50; ASA A77.1-1951)

Hollow Load-Bearing Concrete Masonry Units, Specifications for, ASTM C90-52; ASA A79.1 (Revision of ASTM C90-44; ASA A79.1-1944)

Methods of Sampling and Testing Structural Clay Tile, ASTM C112-52; ASA A83.1 (Revision of ASTM C112-36; ASA A83.1-1942)

Methods of Sampling and Testing Concrete Masonry Units, ASTM C140-52; ASA A84.1 (Revision of ASTM C140-39; ASA A84.1-1942)

Solid Load-Bearing Concrete Masonry Units, Specifications for, ASTM C145-52; ASA A81.1 (Revision of ASTM C145-40; ASA A81.1-1942)

Consumer

New Project Requested—

Standards for Serviceability of Textile Fabrics
Requested by: American Hotel Association

Electrical

American Standards Withdrawn—

Hard-Drawn Aluminum Conductors, Physical and Electrical Properties, C11-1927, Replaced by Hard-Drawn Aluminum Wire for Electrical Purposes, Specifications for, ASTM B230-50T; ASA C7.20-1951
Sponsor: American Society for Testing Materials

American Standards Approved—

Electron Tube Bases, Caps, and Terminals, C60.1-1952; RTMA ET 103-B; NEMA No. 500B (Revision of ASA C60.1-1949; RTMA ET 103-A; NEMA No. 500A)

Rating Values of Interelement Capacitances, C60.8-1952; RTMA ET-114; NEMA Pub 510
Sponsor: Joint Electron Tube Engineering Council

In Board of Review—

Laminated Thermosetting Products, C59.16 (Revision of C59.16-1951; NEMA 46-118)

Vulcanized Fibre, C59.20 (Revision of C59.20-1949; NEMA VU1-1949)

Specifications for Rubber Insulating Tape, ASTM D119-48T; ASA C59.6 (Revision of ASTM D119-38; ASA C59.6-1939)
Sponsor: American Society for Testing Materials

Method of Test for Dielectric Strength of Insulating Oil of Petroleum Origin, ASTM D877-49; ASA C59.19
Sponsor: American Society for Testing Materials

Gage for Electron Tube Bases, ASA C60.7; RTMA ET 106A; NEMA Pub 503A

Gas Appliances

Reaffirmation Recommended—

Listing Requirements on Gas Hose for Portable Gas Appliances, Z21.2-1949

Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1949

Requirements for Installation of Domestic Gas Conversion Burners, Z21.8-1948

Approval Requirements for Hot Plates and Laundry Stoves, Z21.9-1948 and Z21.9a-1949

Listing Requirements for Gas Valves, Z21.15-1944, and Z21.15a-1949

Listing Requirements for Domestic Gas Conversion Burners, Z21.17-1948

Approval Requirements for Dual Oven Type Combination Gas Ranges, Z21.37-1948

Materials and Products

In Correlating Committee—

Free-Cutting Brass Rod and Bar for Use in Screw Machines, H8.1 (Revision of ASTM B16-49; ASA H8.1-1949)

Seamless Copper Pipe, Standard Sizes, Specifications for, ASTM B42-51; ASA H26.1 (Revision of ASTM B42-49; ASA H26.1-1949)

Seamless Red Brass Pipe, Standard Sizes, Specifications for, ASTM B43-51; ASA H27.1 (Revision of ASTM B43-49; ASA H27.1-1949)

Seamless Copper Water Tube, Specifications for, ASTM B88-51; ASA H23.1 (Revision of ASTM B88-50; ASA H23.1-1949)

Copper-Silicon Alloy Wire for General Purposes, Specifications for, ASTM B99-51; ASA H30.1 (Revision of ASTM B99-49; ASA H30.1-1949)

Copper and Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for, ASTM B124-51; ASA H7.1 (Revision of ASTM B124-49; ASA H7.1-1949)

Brass Wire, Specifications for, ASTM B134-51; ASA H32.1 (Revision of ASTM B134-50; ASA H32.1-1951)

Leaded Red Brass (Hardware Bronze) Rods, Bars, and Shapes, Specifications for, ASTM B140-51; ASA H33.1 (Revision of ASTM B140-50; ASA H33.1-1951)
Sponsor: American Society for Testing Materials

Mechanical

American Standards Published—

Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, B5.28-1952 $1.00
Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; Society of Automotive Engineers

In Correlating Committee—

Track Bolts and Nuts, B18.10 (Revision of B18d-1930)
Sponsor: American Society of Mechanical Engineers

Motion Pictures

American Standards Published—

Raw Stock Cores for 16-Millimeter Motion Picture Film, PH22.38-1952 (Revision of Z22.38-1944) $0.25
Sponsor: Society of Motion Picture and Television Engineers

Edge-Numbering 16-Millimeter Motion Picture Film, PH22.83-1952 $0.25
Sponsor: Society of Motion Picture and Television Engineers

Standards Submitted—

Cutting and Perforating Dimensions for 35mm Motion Picture Film, PH22.1

Reel Spindles for 16mm Motion Picture Projectors, PH22.50

Dimensions for Projection Lamps Medium Prefocus Ring Double-Contact Base-Up Type for 16mm and 8mm Motion picture Projectors, PH22.84

Dimensions for Projection Lamps Medium Prefocus Base-Down Type for 16mm and 8mm Motion Picture Projectors, PH22.85

Enlargement Ratio, 16mm to 35mm Optical Printing, PH22.92

Office Equipment

American Standard Published—

Installation of Telephone Equipment on Desks, X2.1.2-1952 $0.25
Sponsor: National Office Management Association

Optics

In Correlating Committee—

Nomenclature for Radiometry and Photometry, Z58.1.1
Sponsor: Optical Society of America

Photography

In Board of Review—

Spectral Diffuse Densities of Three-Component Subtractive Color Films, PH2.1
Sponsor: Photographic Standards (Correlating) Committee

In Correlating Committee—

Photographic Hangers (Channel-Type, Plate and Sheet Film), Specifications for, PH4.4

Back Window Location for Roll Film Cameras, PH3.1 (Revision of Z38.4.9-1944)

Method for Determining Performance Characteristics of Focal-Plane Shutters Used in Still Picture Cameras, PH3.2 (To replace WS Z52.65-1946)

Exposure-Time Markings for Focal-Plane Shutters Used in Still Picture Cameras, PH3.3 (To replace proposed WS Z52.64)

Method for Determining Performance Characteristics of Between-the-Lens Shutters Used in Still Picture Cameras, PH3.4 (To replace Z52.63-1946)

Exposure-Time Markings for Between-the-Lens Shutters Used in Still Picture Cameras, PH3.5 (To replace WS Z52.62-1946)

Tripod Connections for American Cameras (¼ in.-20 thread), PH3.6 (Revision of Z38.4.1-1942)

Tripod Connections for Heavy-Duty or European Cameras (⅜ in.-16 thread adapter for ¼ in.-20 tripod screws), PH3.7 (Revision of Z38.4.2-1942)

Sensitometry and Grading of Photographic Papers, PH2.2 (Revision of Z38.2.3-1947)

Dimensions for Aerial Film Spools, PH1.2-PH1.9 (Revision of Z38.1.32-1945 through Z38.1.34-1945 and Z38.1.36 through Z38.1.40-1945)

Roll Film and Unsensitized Leaders and Trailers for Aerial Photography, PH1.10 (Revision of Z38.1.4-1944)
Sponsor: Photographic Standards (Correlating) Committee

Pipe and Fittings

American Standards Approved—

Section 8 on Gas Pipeline and Distribution Systems, B31.1.8-1952 of the American Standard Code for Pressure Piping, B31.1-1951
Sponsor: American Society of Mechanical Engineers

Cement Mortar Lining for Cast-Iron Pipe and Fittings, Specifications for, A21.4 (Revision of A21.4-1939)

Short-body Cast-Iron Fittings, 3 Inch to 12 Inch, for 250 psi Water Pressure Plus Water Hammer, Specifications for, A21.10-1952
Sponsors: American Gas Association; American Society for Testing Materials; American Water Works Association; New England Water Works Association.

Safety

American Standards Published—

Safety Code for Forging and Hot Metal Stamping, B24.1-1952 (Revision of B24-1927) $1.00
Sponsor: Drop Forging Association; National Safety Council

In Standards Council—

Practice for Industrial Lighting, A11.1 (Revision of A11-1942)
Sponsor: Illuminating Engineering Society

In Board of Review—

Portable Wood Ladders, A14.1 (Revision of A14.1-1948)
Sponsors: National Association of Mutual Casualty Companies; American Society of Safety Engineers; American Ladder Institute

Reaffirmation Recommended—

Safety Code for Jacks, B30.1-1943
Sponsor: American Society of Mechanical Engineers

Code for Cranes and Derricks and Hoists, B30.2-1943
Sponsor: American Society of Mechanical Engineers

Soaps and Detergents

Standards Submitted—

Ordinary Bar Soap, Specifications for, ASTM D497-52; ASA K60.2 (Revision of ASTM D497-39; ASA K60.2-1948)

Palm Oil Chip Soap, Specifications for, ASTM D536-52; ASA K60.16 (Revision of ASTM D536-42; ASA K60.16-1948)

What's New on American Standard Projects

Small Tools and Machine Tool Elements, B5—

Sponsors: Metal Cutting Tool Institute; Society of Automotive Engineers; National Machine Tool Builders' Association; American Society of Mechanical Engineers

Tentative drafts of a proposed revision of the American Standard, Adjustable Adapters for Multiple Spindle Drilling Heads, B5.11-1937, and of the American Standard, Machine Pins, B5.20-1947, are now being circulated for comment and criticism. The revision in American Standard B5.20, Machine Pins, has to do with the dimensions of cotter pins.

A proposed new American Standard on Knurling is also being circulated. This covers knurling tools and includes their dimensional relations with stock in the production of straight, diagonal and diamond knurling on cylindrical surfaces. These tools and recommendations are equally applicable to general purpose and precision knurling. "They should reduce the failure of knurling tools and the production of defective work as well as decrease the number of tools required," it is explained.

Copies of these three proposed standards can be obtained without charge from D. M. Shackelford, Standards Administrator, The American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y.

National Electrical Code, C1—

Sponsor: National Fire Protection Association

Interpretation No. 386 issued by the Electrical Section, National Fire Protection Association (Sectional Committee C1 on the National Electrical Code) refers to Section 4542, Transformer Vault Construction. *Question:* It is proposed to use in the walls and roofs of transformer vaults a fire-resistant type of reinforced concrete not less than 6 in. thick. The extra fire resistance results from the substitution of an insulating material, known as perlite, for the usual sand and gravel aggregate so that the bearing strength of the resulting concrete will be approximately one-half that of standard concrete, but with approximately eight or nine times the heat-insulating value. The bearing strength of this perlite concrete would be greater than that of the hollow tile or hollow concrete building units now mentioned

in Section 4542. Would the use of such a material meet the intent of Section 4542?
Answer: Yes.

Electrical Measuring Instruments, C39—

Sponsor: Electrical Standards Committee

The proposed American Standard for Direct-Acting Electrical Recording Instruments, Switchboard and Portable, C39.2, has been approved by the sectional committee. It is expected that it will be submitted soon to the American Standards Association for approval.

Work on Automatic Null-Balancing Electrical Measuring Instruments was started by Subgroup 3 at a meeting October 3. The proposed standard will apply to d-c potentiometer, d-c bridges and a-c bridges. For purposes of defining scope the committee has compiled a tentative list of quantities that may be measured, as follows: d-c voltage and current, a-c power and voltage, temperature, hydrogen-iron concentration, resistance, gas analysis, impedance, electrolytic conductivity, flow, pressure, liquid level and position. Many other quantities may be measured through the means of suitable translation devices.

Definitions of Electrical Terms, C42—

Sponsor: American Institute of Electrical Engineers

A revision of the American Standard Definitions of Electrical Terms, C42-1941, is progressing to the point where the completion of the revision is now in sight. This is to be a comprehensive revision as indicated by the fact that it will contain more than 10,000 definitions whereas the present edition has approximately 4,000.

Electric Lamps, C78—

Sponsor: Electrical Standards Committee

E. H. Salter, Electrical Testing Laboratories, New York, has been elected chairman of this sectional committee, succeeding G. L. Diggles. Mr Diggles retired recently. Mr Salter's intimate knowledge of the intricate problems of the lamp industry assures the sectional committee a continuance of the excellent administration of Mr Diggles, announcement of his election declared.

Gaillard Seminar on Industrial Standardization

January 1953

How to organize their own standardization work and how to have those in charge of this work trained in the art of writing standard specifications are problems faced by an increasing number of industrial enterprises.

As an aid in solving these problems, taking into account the individual requirements of each company, a private five-day seminar on industrial standardization will be held by Dr John Gaillard, mechanical engineer on the staff of the American Standards Association and lecturer at Columbia University.

Previous sessions of this seminar have been attended by a total of 158 men representing 98 organizations. Most of these are individual manufacturing concerns in the United States and Canada. The list of attendance also includes representatives from the Army, Navy and Air Force; National Machine Tool Builders Association; Massachusetts Institute of Technology; and Canadian Standards Association.

In addition to company standards engineers, the seminar groups included chief engineers, production managers, chief inspectors, quality control directors, industrial engineers, purchasing agents, and methods engineers. Some companies have been represented by several men, either at the same seminar or at different sessions, each member of the company team having an interest in a special application of standardization. Direct interest in the management angle of company standardization has been shown by attendance of the assistant to the president of one company, a vice-president of another, and the president of a third.

The next Gaillard Seminar will be held from January 26 through 30, 1953, in the Engineering Societies Building, 29 West 39 Street, New York City. There will be ten conferences, one in the morning (9:30 to 12:00) and one in the afternoon (1:30 to 4:00), Monday through Friday. The various subjects on the seminar program will be presented by Dr Gaillard and then discussed around the table.

For further details and registration, write to Dr John Gaillard, 400 West 118 Street, New York 27, N. Y., or phone him at the ASA office, Murray Hill 3-3058.

Correction in American Standard Acoustical Terminology, Z24.1-1951

In subsections 1.325 and 1.365, the following changes should be made:

1.325 Sound Pressure Level, Page 11

Change Note 2 to read:

Note 2: It is to be noted that in many sound fields the sound pressure ratios are not the square roots of the corresponding power ratios and hence cannot be expressed in decibels in the strict sense; however, it is common practice to extend the use of the decibel to these cases. (See 1.280 and 1.285)

1.365 Velocity Level Page 12

Change Note to read:

Note: It is to be noted that in many sound fields the particle velocity ratios are not the square roots of corresponding power ratios and hence cannot be expressed in decibels in the strict sense; however, it is common practice to extend the use of the decibel to these cases. (See 1.280 and 1.285)

Batt to Receive Coonley Medal at ASA Annual Meeting

The thirty-fourth Annual Meeting of the American Standards Association is being held at the Waldorf-Astoria, New York, Tuesday, November 25. A joint meeting of the Board of Directors and Standards Council is scheduled for 10:30 a.m. in the Flamingo Room on the main floor. Company Members will have the privilege of the floor. Non-members and guests are invited to attend.

Following the annual meeting, the Award Luncheon is scheduled for 12:30 in the Sert Room. William L. Batt, until recently Minister in Charge of the Mutual Security Agency Mission to the United Kingdom and American representative to the NATO Production Board, will receive the Howard Coonley Medal. Mr Batt was formerly president of SKF Industries. He will be introduced by Robert M. Gates, President of the Air Preheater Corporation and chairman of ASA's Executive Committee. Both are past presidents of the American Society of Mechanical Engineers. Mr Gates succeeded Mr Batt as a member of the ASA Board representing the Society.

The Standards Medal will be presented to Frank O. Hoagland, Master Mechanic, Pratt and Whitney Division of the Niles-Bement-Pond Company. He will be introduced by Colonel Willard T. Chevalier, Executive Vice-President of McGraw-Hill Publishing Company and a member of the ASA Board of Directors. Colonel Chevalier is chairman of the Standards Medal Award Committee.

The recipients of the medals will be the principal speakers at the luncheon.

An additional feature of the meeting will be the announcement of election of officers and new members of the Board of Directors.

• • **Charles E. Hilton,** staff engineer of the American Standards Association, has been appointed to the Paris staff of Mutual Security Agency's Special Representative for Europe. He will serve as standardization and simplification specialist.

Mr Hilton has been given a two-year leave of absence by ASA to accept the government post.

Mr Hilton has been with ASA since 1945 and has served as ASA engineer in the standardization projects relating to uniform drafting practice, graphical presentation, chemical industry equipment, scientific apparatus, symbols and abbreviations in all fields of science and engineering, gas burning appliances, and office management. Since February 1952, he has also served as consultant on simplification and standardization to the Conservation Division, Defense Production Administration, in Washington.

In his new post, Mr Hilton will be responsible for coordinating the standardization and simplification activities of the MSA Productivity and Technical Assistance Missions with those of the Office of European Economic Cooperation. Both are engaged in a joint program to apply the techniques of standardization and simplification to increase productivity throughout Western Europe.

• • **The British Standards Institution** has announced that T. R. B. Sanders, C.B. has been appointed Engineering Adviser to the Institution.

Mr Sanders has held a number of key positions at the Ministry of Supply and has been concerned with the technical development of a wide range of equipment for the Armed Services. He was in charge of the Ministry's standardization program and came into close contact with the BSI at that time. For some years he was a member of the Institution's Engineering Divisional Council. In 1948 he was a signatory, on behalf of the British Government, of the "Declaration of Accord" by which the American-British-Canadian Unified Screw Threads were established.

It is expected that Mr Sanders' primary attention will be directed to British activities in connection with the current A-B-C Program for Unification of Engineering Standards.

ASA Committees Asked to Help Speed Pipe Deliveries

Because power, electrification, and petroleum expansion programs are being delayed by slow deliveries of heavy-wall pipe, a conference held under the auspices of the National Production Authority has asked the American Standards Association to help solve the problem. Members from the various industries present at the conference expressed belief that further standardization of heavy-wall pipe would help speed deliveries. This pipe is defined as 7/8 in. or more in thickness and 85/8 in. to 18 in. outside diameter both alloy and carbon.

The request recommended that Sectional Committee B36 review existing standard thicknesses and pipe schedules in light of changes in allowable stresses promulgated by the ASME Boiler Code Committee and the Sectional Committee on the Code for Pressure Piping, B31. NPA stressed that speed is essential.

J. J. Kanter, Crane Company, chairman of ASA Sectional Committee B36 on Standardization of the Dimensions and Material of Wrought Iron and Wrought Steel Pipe and Tubing, has accepted the responsibility on behalf of his committee. He has appointed a special task group which will meet November 21.

The conference was attended by representatives of pipe manufacturers, metal pipe fabricators, power boiler manufacturers, design engineers, the American Society of Mechanical Engineers, the American Petroleum Institute, the American Standards Association, and governmental agencies. It was called on recommendation of the Fabricated Metal Piping Industry Advisory Committee.

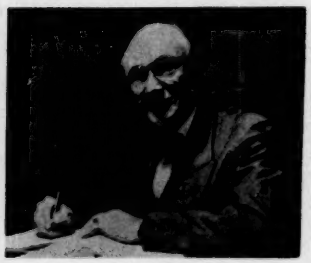
• • **A bulletin entitled "American National Pipe Threads—Designations and Differences in Specifications"** has been published by the Eastern Machine Screw Corporation, discussing the different types of pipe threads and referring to the American Standard B2.1-1945. "This publication deals not only with different types of Taper Pipe Threads, Straight Pipe Threads, and their purposes but also gives the proper designation letters by which such threads can be specified," the company explains. "It is an attempt to clear up many misunderstandings concerning Pipe Threads of all kinds." Copies can be obtained from the Eastern Machine Screw Corporation, Truman and Barclay Streets, New Haven 6, Connecticut.

• • **L. F. Hickernell,** chief engineer of the Anaconda Wire & Cable Co, Hastings-on-Hudson, New York, has been named chairman of a newly formed Committee on Technical Operations of the American Institute of Electrical Engineers.

The new committee will be coordinating agency for the AIEE's five technical divisions, which represent 38 technical committees. It will supervise all technical affairs of the Institute.

Formerly, Mr Hickernell had been chairman of the Institute's Technical Advisory Committee. The new committee is a merger of the Advisory Committee and the Technical Program Committee, with the addition of the chairmen of the Committees on Standards, Education, Research, Publication, Management, Safety, and the committee on Awards of Institute Prizes.

L. F. Hickernell



THROUGH HISTORY *with* STANDARDS.

One of a Series

A national standard for steam boilers has brought new safety to an old hazard

From the earliest practical applications of steam for prime movers in the 18th century, boiler explosions were a serious cause of loss of life and damage to property. Steamboat boiler explosions were especially common, comparing in frequency and severity with the worst catastrophes of today. On April 27, 1865, for instance, the steamboat Sultana, plying the Mississippi River near Memphis, exploded with the loss of 1,450 lives.

In 1911 the Council of the American Society of Mechanical Engineers appointed a Committee to Formulate Standard Specifications for the Construction of Steam Boilers and Other Pressure Vessels and Their Care in Service (known since 1914 as the Boiler Code Committee). It issued the first ASME Boiler Code three years later.

The makers of this code set out to create a set of rules for the construction and care of steam boilers that would be adopted by all the states of the union. Today, 28 states and territories, eight provinces of Canada, Australia, Mexico City, and a number of other countries and cities have adopted one or more sections of the Code. Through its extensive use and uniform administration, the Code is now in every sense of the word a national standard.

The 1952 Code, as revised and enlarged, has nine sections totaling some 1000 pages. It is administered by a Committee of 24 members and an Executive Committee of eight, made up of men of special training and experience representing designers, fabricators, suppliers of materials, operators, and consultants. Some three dozen subcommittees serve under the Code Committee.

Since 1916 the record of serious boiler explosions has been exceptionally low, despite the great increase in the number and size of boilers. For this, the Boiler Code Committee has been in a large measure responsible. In a citation to the Committee in September, 1952, the American Standards Association stated: "Probably no other single standard in America has done more for national safety than the ASME Boiler Code."

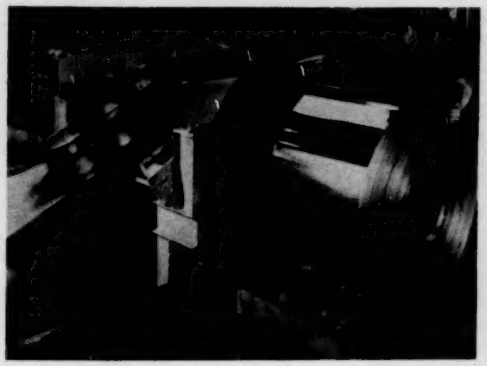
• • **The second meeting of the A-B-C Conference** of Engineering Standards is to be held the week of February 9-13, 1953.

Although originally scheduled for October 14, the meeting was postponed in order to give all concerned an opportunity to prepare their material more completely for discussion at the conference. Sponsors of ASA Sectional Committees have been asked to advise ASA not later than December 10 as to the programs they plan to propose.

TWO NEW AMERICAN STANDARDS FOR APPLICATION IN YOUR PLANT

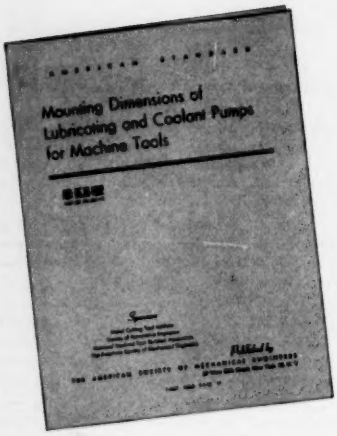
AMERICAN STANDARD PREFERRED THICKNESSES FOR UNCOATED THIN FLAT METALS
B32.1-1952 **$1.00**

How often company engineers have risen in ASA meetings to question the use of gage numbers for specifying thicknesses of thin flat metals! American Standard B32.1-1941 had specified standard decimal thicknesses. But many warehouses continued to stock thicknesses in accordance with gage numbers.



Now, a new agreement has been reached. A new table of preferred thicknesses gives a wider selection of decimal dimensions. It applies to thicknesses of uncoated, thin, flat metals and alloys below 0.250 in., meeting most of the general purposes of industry.

Prepared by Sectional Committee on Standardization of Wire Diameters and Metal Thicknesses, B32, sponsored by The American Society of Mechanical Engineers and the Society of Automotive Engineers.



$1.00

●

Now you can be sure of quick and easy replacement for the lubricating and coolant pumps on your machine tools! This is what American Standard B5.28-1952 does for you. Six tables give specific mounting dimensions for pumps and mounting brackets. They cover motor-driven centrifugal pumps (vertical submerged type); centrifugal and geared pumps (motor foot-mounting types); centrifugal pumps (flange-mounted type); and gear and vane pumps (foot mounted).

AMERICAN STANDARD MOUNTING DIMENSIONS OF LUBRICATING AND COOLANT PUMPS FOR MACHINE TOOLS **B5.28-1952**

Prepared by Sectional Committee on Small Tools and Machine Tool Elements, B5, sponsored by the Metal Cutting Tool Institute, Society of Automotive Engineers, National Machine Tool Builders' Association, The American Society of Mechanical Engineers.

American Standards Association
Incorporated
70 East 45 Street,
New York 17, N. Y.

Please send me ..... copies of American Standard Preferred Thicknesses for Uncoated Thin Flat Metals, B32.1-1952 at $1.00.

Please send me ..... copies of American Standard Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools, B5.28-1952 at $1.00.

Name .....

Address .....

City ..... Zone ..... State .....

Remittance enclosed ..... Send invoice .....